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THE RELATIONSHIP BETWEEN TEACHER BEHAVIOR IN DIVISION II GAMES CLASSES AND THE AMOUNT OF TEACHER TRAINING AN INDIVIDUAL RECEIVED SPECIFICALLY IN PHYSICAL EDUCATION

by

© CATHERINE E. CAMPBELL

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

DEPARTMENT OF ELEMENTARY EDUCATION

EDMONTON, ALBERTA

FALL 1980

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE RELATIONSHIP BETWEEN TEACHER BEHAVIOR IN DIVISION II GAMES CLASSES AND THE AMOUNT OF TEACHER TRAINING AN INDIVIDUAL RECEIVED SPECIFICALLY IN PHYSICAL EDUCATION submitted by CATHERINE E. CAMPBELL in partial fulfilment of the requirements for the degree of MASTER OF EDUCATION.

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.....

Date...May 30, 1980.....

ABSTRACT

The purpose of this study was to examine teacher-student interaction to ascertain whether there was any relationship between teaching behavior in Division II games classes and the amount of teacher training an individual received specifically in physical education.

The study focussed on the following questions:

1) Do teachers with similiar training exhibit common teaching behaviors?
2) Do teachers with similiar training exhibit different teaching behaviors than teachers with different amounts of training?

Ten teachers with various amounts of training were observed, utilizing a modified version of Robbins' (1973) instrument, for three consecutive thirty-minute classes while teaching games lessons. Utilizing the responses collected on a teacher questionnaire which was obtained after the third and final observation, the ten teachers were divided into four training groups: elementary physical education specialist group; general physical education specialist group; general training group and a no training group.

The data consisted of observations made on a five second time interval basis and categories were recorded on a score sheet then keypunched for analysis. Data analysis was facilitated by the use of Test 13, a University of Alberta

computer program.

The tentative conclusions were that teachers with similiar training exhibit similiar teaching behaviors and that the elementary physical education specialist group appeared to exhibit more unique teaching behaviors than the other three training groups. These conclusions suggest that teacher training in physical education does have an impact on teacher behavior in Division II games classes.

The study was designed to identify common teaching behaviors between teachers with similiar amounts of teacher training in physical education. The analysis attempted to describe the impact various amounts of teacher training in physical education had on teaching behavior. There was no intention to suggest that one teaching behavior was any more effective or superior than any other.

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Appreciation is extended to the Edmonton Separate School Board, especially the ten teachers, who must remain anonymous but who gave of their time so freely and showed such enthusiasm and interest in the study.

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I. STATEMENT OF THE PROBLEM

A. Introduction

The teaching methods a teacher utilizes reflect a personal philosophy of education, and the philosophy of education currently prevalent in a culture or country (Logsdon, Barrett, Ammons, Broer, Halverson, McGee & Robertson, 1977; Mosston, 1966; Schurr, 1967). Since all children will not, and do not respond in the same way to various teaching methods, educators are encouraged to utilize a variety of teaching methods (Bilbrough & Jones, 1963; Kirchner, 1966; McCarty & Associates, 1973; Mosston, 1966, 1972; Schurr, 1967). This means that the teacher must diversify the kinds of verbal interaction utilized in a learning situation (Siedentop, 1976).

Davis and Wallis (1961) state that "a teaching method may be defined as a general way of guiding and controlling learning experiences" (p.249). A teaching method may be further defined by ascertaining how large a role the student has in the decision making process (Bilbrough & Jones, 1963; Kirchner, 1966; Logsdon et al., 1977; Mosston, 1966).

There has been increasing interest in the interaction between teachers and pupils in an educational setting. Robbins (1973) developed an observational instrument to analyze teacher behavior in elementary school physical education classes based on Flanders' (1966) interaction analysis and Bellack's (1966) "four pedagogical moves".

Robbins ascertained that the instrument fulfilled the need to reliably describe the interaction between teacher and pupils in the physical education setting. One of the questions Robbins' (1973) study generated was: "Is teaching behavior related to the length or amount of teacher training?" (p. 104).

Kirchner (1966) hypothesized that teacher behavior and teacher training may be related and stated that:

> How a classroom teacher utilizes the various methods and techniques in her physical education period will depend upon several prior factors. The first consideration, and sometimes a limiting one is the qualification and experience of the teacher (p. 160).

According to Mosston (1972) teachers may be "locked into" a given style of teaching due to an ignorance of alternatives. Thus attention has been drawn to the possible impact teacher training programs may have on an individual's teaching methods.

B. Purpose of the Study

The purpose of this study was to examine teacher-student interaction and to ascertain whether there was any relationship between teaching behaviors in Division II games classes and the amount of teacher training an individual received specifically in physical education.

The study focussed on the following questions:

1) Do teachers with similiar training exhibit common teaching behaviors?
2) Do teachers with similiar training exhibit

different teaching behaviors than teachers with different amounts of training?

C. Significance of the Study

Teaching is the interaction between teachers and students. In order to study teaching behavior, it is necessary to observe the interaction between teachers and students within an educational setting.

Since there is a paucity of research on the possible impact teacher training has upon teaching behavior, this study attempted to ascertain if any such relationship exists in the physical education setting.

Fishman and Anderson (1971) stated:

> ...efforts to describe the teaching process will result in the availability of concrete evidence by which to effect a change in the substantive content of professional education programs and lead to improved teaching in physical education (p.16).

Siedentop (1972) stated that the major focus of any teacher training program must be teacher behavior. Descriptive-analytic research of teacher behavior represents a start in the direction towards enhancing teacher training programs (Anderson, 1971).

D. Assumptions

1. The study assumed that the coded records of teacher behavior in the physical education games setting provided a sufficient sample of the total teacher behavior in physical education games lessons.

2. The study assumed that observer bias was minimal.

E. Delimitations

1. The study was delimited to a sample of ten teachers holding a four year Bachelor degree.
2. The subjects all taught with the Edmonton Separate School Board, taught Division II, and taught the games segment of their physical education program.
3. The study was delimited to a list of possible subjects provided by the Edmonton Separate School Board supervisor of physical education.
4. The study was delimited to Robbins' (1973) instrument for analyzing teacher behavior in elementary school physical education. The study provided information on those aspects of the teacher-student interaction described in Robbins' (1973) instrument.
5. The study was delimited to those behaviors which occurred every five seconds, no attempt was made to account for the behaviors which occurred in the intervening intervals.

F. Limitations

1. The presence of an observer in the gymnasium may have affected the teaching behavior of the teacher involved.
2. The sample may not have been representative of the population.
3. The delimitations limit the generalizability of the

results to other school boards, other grade levels, or other segments of the program.

4. The sample of teachers participated voluntarily, thus the sample was opportunistic.
5. At the end of the study it was discovered that one of the teachers did not hold a four year Bachelor degree. The teacher held a Graduate Diploma in education issued from a foreign institution. However the teacher involved had over fifteen years teaching experience, and therefore, it was decided to include the teacher in the Bachelor of Education sample group.
6. One teacher was interrupted for two long periods of time by announcements over an intercom. Under ordinary circumstances this would be recorded as non-physical education structuring, but, it was felt that this would bias the teacher's "normal" teaching behavior, therefore, it was deleted from the sample.
7. At the end of the study it was discovered that the General Physical Education Specialist group had only one member, thus this individual may not be representative of this training group.

G. Definition of Terms

1. Elementary School Physical Education - "This term refers to a program of physical activities for grade one through six" (Robbins, 1973, p. 8).
2. Elementary School Physical Education Games - Games

involve skill development and activity in games of low organization; individual and dual activities; team sports and creative games (Kirchner, 1966, p. 189).

3. Interaction - This term refers to a relationship between persons such that: "...the behavior of one is stimulus to the behavior of the other" (English & English, 1958, p. 270).
4. Teacher Behavior - "The behavior patterns a teacher exhibits in performing instructional duties when in interaction with pupils" (Wesson, 1973, p. 7).
5. Elementary Physical Education Specialist - Teachers who, as a part of their teacher training, have received credit in at least eight accredited half courses (three credit hours per course) specific to ages five to twelve in physical education or movement education.
6. General Physical Education Specialist - Teachers who, as a part of their teacher training, have received credit in at least eight accredited half courses (three credit hours per course) in physical education, not specific to ages five to twelve.
7. General Training - Teachers who, as a part of their teacher training, have received credit in at least one and not more than seven accredited half courses (three credit hours per course) in physical education or movement education.
8. No Training - Teachers who, as a part of their teacher training, have taken no accredited courses in physical

education or movement education.

H. Organization of the Study

This report of the descriptive analysis of teacher training in physical education and teacher behavior in Division II games classes utilizing a modified version of Robbins' (1973) instrument consists of six chapters.

Chapter One has introduced the problem and stated the research questions. Also presented were the assumptions, limitations, delimitations and definitions of terms, all of which provide relevant background information for this study. The significance of the study was also presented.

Chapter Two provides the theoretical background for the study. Specifically, research in classroom interaction analysis and research in interaction analysis and physical education is reviewed.

Chapter Three presents the design of the study. Selection of the population, organization of the classrooms, characteristics of the groups, instrumentation, observer training, observer objectivity and reliability, data collection and procedures used in data analysis and display are reported.

Chapter Four reports the results of the study. The within group analyses, between group analyses and the results of "the teacher training determination form" are discussed.

Chapter Five presents a critique and implications

arising from the use of a modification of Robbins' (1973) instrument.

The final chapter presents the findings, conclusions and suggestions for further research.

II. REVIEW OF THE LITERATURE

The purpose of this chapter is to provide the theoretical background for this study. The chapter will review classroom interaction analysis as well as survey pertinent research in the area of interaction analysis and physical education.

A. Classroom Interaction Analysis

The purpose of interaction analysis is to examine the teaching process in order to gain an understanding of the world of the classroom. The researcher collects accurate descriptive records of the verbal actions of students and teachers, then analyzes them to enable a better understanding of the events (Anderson, 1971; Bellack, 1966).

Many classification systems have been developed. Flanders (1970) stated:

> Interaction analysis refers not to one system but to many systems for coding spontaneous verbal communication, arranging the data into useful display and then analyzing the results in order to study patterns of teaching and learning (p. 28).

Differences in these systems usually occur in the categories the researcher chooses in order to analyze the teacher-student interaction. The analysis of the data usually involves frequencies and sequences of behavior (Anderson, 1971). The categories are reflective of the interests of the researcher as well as the theoretical framework in which he works.

Flanders and his co-workers between 1955 and 1960 developed a ten category observational instrument which Flanders (1970) described as a system which analyzes chains of events, where an event is the shortest possible act an observer can record. One event leads to another which forms chains of actions. A pattern is a chain of events that can be readily identified, occurs frequently and as such can be given a label. These patterns of behavior are descriptive of models and strategies of teaching and learning. The ten-category system was developed primarily to analyze the direct/indirect influences within the classroom as indicated by the verbal interaction between the teacher and students. The categories were as follows (Flanders, 1970, p. 34):

Indirect Influence

Teacher Talk - Response

1. Accepts feelings.
2. Praises or encourages.
3. Accepts or uses idea of pupil.

Teacher Talk

4. Asks questions.

Direct Influence

Teacher Talk - Initiation

5. Lecturing.
6. Giving instructions.
7. Criticizing or justifying authority.

Student Talk

8. Pupil talk - response.

9. Pupil talk - initiation.

10. Silence or confusion.

Bellack and his co-workers (1966) developed a category system where the verbal actions of teachers and students are classified in four "pedagogical moves" which are classified in terms of their pedagogical function (Bellack, 1966, 1970). These categories were:

Initiating Moves

1. Structuring - setting the context for further behaviors.
2. Soliciting - actions to solicit a verbal, physical, or mental response.

Reflexive Moves

3. Responding - actions which occur in response to and fulfill the expectations of the soliciting moves.
4. Reacting - occurs in reaction to the other three categories, but are not directly elicited by them.

B. Interaction Analysis and Physical Education

Most interaction systems have been developed for classroom use and are therefore limited in their application to physical education since they do not account for meaningful non-verbal activity (Anderson, 1971; Dougherty, 1971). Anderson (1971, 1975) indicated that

researchers in the area of physical education are beginning to develop systems which adequately describe events in the physical education setting. The events are classified into meaningful categories so that a concise picture of what happened may be formed.

The following is a review of what instruments have been developed and what aspect of the physical education setting they focussed upon.

Nygaard (1975) utilized Flanders' (1966) system of interaction analysis to analyze the verbal behavior of teachers in a physical education setting. No attempt was made to account for non-verbal behavior. The results indicated that the primary interaction pattern was one of lecture, followed by silence or confusion, followed by lecture. Male teachers had a different primary interaction pattern than did females. There were also different primary interaction patterns and category emphasis at different grade levels.

A fifty category system was developed by Bookhout (1967) to analyze the relationship between patterns of teacher behavior and the social-emotional climate in physical education classes. The results indicated six patterns of teaching behavior in physical education classes of which two were climate-related.

Barrett (1969) recorded verbal behavior as well as movement responses in movement education classes. Her categories included:

1. Movement tasks - method
2. Content
3. Guidance
4. Student Responses

Low inter-judge agreement limited the usefulness of this instrument in the field.

A system for analyzing augmented feedback by teachers in physical education classes was developed by Fishman (1974). The student receives feedback about his motor performance from his own sensory system, but this feedback may also be augmented by the teacher. Augmented feedback by the teacher may take the form of knowledge of performance or knowledge of results (Marteniuk, 1976). There is a significant relationship between augmented feedback and motor learning. The purpose of Fishman's (1974) study was to design a procedure to record how teachers provided augmented feedback. Fishman observed video-taped lessons and suggested that the system may be too complex for live situations.

Fishman's (1974) system was modified by Tobey (1974) to describe and analyze occurrences of augmented feedback in physical education classes. Results indicated that feedback was frequently used and was an influential variable in teaching motor skills.

A system to describe the teacher's role in the learning-activity selection process in physical education classes was developed by Hurwitz (1974). The major categories utilized were:

1. Director
2. Predictor (of consequences)
3. Identifier (of alternatives)
4. Encourager
5. No role

The results indicated that further development of the instrument was needed.

Dougherty (1971) suggested using a modification of Flanders' (1970) system of analysis by adding an eleventh category of "meaningful non-verbal activity", and dividing "teacher talk" into categories for individual and group interaction. Dougherty did not report any research which had utilized this modified version.

A multi-dimensional system to code student behavior from video-taped physical education classes was developed by Laubach (1975). Each student's behavior was individually coded several times to accommodate four dimensions. The dimensions were:

1. Function - why a student was doing the activity.
2. Mode - movement or non-movement.
3. Content - a list of physical activities.
4. Time - the duration of the function.

The system had two forms: one for researchers and one for educators. Both systems were ascertained as being reliable.

Anderson (1975) utilized a series of complementary descriptive-analytic systems, each focussing on a different aspect of the physical education learning situation, to

analyze eighty-three video-tapes. The data described the occurrence of: physical activities; the provision of feedback; the distribution of student behavior; the distribution of teacher behavior and the teacher's role in activity selection.

Martinek, Zaichkowsky and Cheffers (1977) utilized Cheffers' adaptation (Cheffers, Amidon & Rogers, 1974) of Flanders' (1966) system to determine the effects of vertical and horizontal teaching methods on the development of specific motor skills and self-concept in elementary aged children. Vertical teaching patterns are those where all the decisions concerning the learning environment are made by the teacher. In horizontal teaching patterns the decision-making process is shared by the teacher and the students (Lydon, 1978). The study utilized Cheffers' adaptation to identify teaching patterns. Martinek et al. (1977) concluded that Cheffers' system was more accurate than Flanders' system.

Lydon (1978) also utilized Cheffers' (1974) modified system to determine vertical and horizontal patterns of teaching. The purpose of the study was to determine the effect of variable decision-making teaching models upon the development of body coordination and pupil self-concept. Results indicated that neither of the two types of teacher behavior produced a significant effect on either variable.

An instrument to analyze teacher behavior in elementary school physical education was developed by Robbins (1973).

The instrument was an adaptation of both Flanders' (1966) and Bellack's (1966) systems for analyzing interaction. Bellack's divisions of teaching behavior were used as the framework for the categories, while Flanders' instrument and procedures were used as the model for the development of the instrument. The instrument coded verbal and non-verbal interaction and as such captured many crucial events in the gymnasium. The instrument was primarily designed to identify and analyze teaching behavior in a physical education setting.

Wesson (1973) utilized Robbins' (1973) instrument to investigate the effects of teacher behavior, on pupil self-concept in elementary school physical education. The tentative conclusion was that if teachers had positive traits, student self-concept would be higher, and conversely if the teachers had negative traits, student self-concept would be lower.

Pickard (1974) utilized Robbins' (1973) instrument to examine teacher behavior in grade five gymnastics. The tentative results were that each teacher taught in a unique manner. Pickard (1979) has continued this research, to identify common teacher behaviors, utilizing prospective teachers of physical education as subjects. As yet, no results have been reported.

C. Summary

This chapter has provided the theoretical background for the present study. Selected research in physical education, utilizing descriptive-analytic systems, was reviewed to indicate the scope of the field. Most descriptive-analytic systems utilized in physical education are still in the development phase.

III. THE DESIGN OF THE STUDY

This chapter describes the selection of the population, the classrooms involved, characteristics of the groups, instrumentation, observer training, observer objectivity and reliability, data collection, and data analysis and display.

A. Selection of the Population

A list of teachers teaching Division II physical education was obtained from the supervisor of physical education for the Edmonton Separate School Board. Ten teachers from this list were randomly selected and asked if they would participate in the study. Four teachers refused to participate for various reasons, and as a result substitutes were randomly selected from the original list. The supervisor of physical education was then contacted to ensure that the ten teachers selected had varying amounts of teacher training in physical education. An official request for permission to observe these ten teacher was then forwarded to the Edmonton Separate School Board .

A sample size of ten was selected for observation because Robbins (1973), Wesson (1973), and Pickard (1974) utilized sample populations of ten teachers.

B. Organization of the Classrooms

Padfield (1973) and Bell (1974) in their surveys indicated that teachers prefer teaching the games segment of the physical education program. Kirchner (1970) has also stated that "teachers usually have the knowledge and experience to invent suitable games lessons" (p. 148). Thus, the games section of the program was selected for observation, since the teachers may be more comfortable teaching this section of the physical education curriculum.

A letter was sent to each teacher confirming the dates and times of observations (Appendix A). A paragraph was included stating:

> In the observation sessions, please teach a segment of your games program. Skill acquisition and development should be a part of every games lesson.

This statement was included to ensure that some teaching behaviors occurred in each lesson.

Four grade four classes, two grade five classes, and four grade six classes participated in the study. Class size ranged from twenty-four to thirty-one students. Four male teachers and six female teachers constituted the sample population. Since Bennett (1976, p. 176) indicated that age, sex, size of class, or facilities had an insignificant impact on teaching method, no attempt was made to account for these variables.

C. Characteristics of the Groups

A short questionnaire was submitted to each teacher in order to collect some personal data (Appendix B). Information concerning professional training in physical education, attendance at physical education conferences and physical education inservices, memberships in professional physical education organizations, visits by a physical education consultant, years of experience teaching elementary physical education, attitudes towards teaching physical education, and the amount of time per week devoted to teaching physical education, was collected from each teacher. The questionnaire was collected after the final observation.

No Training Group

The no training group included teachers who, as a part of their teacher training, had taken no accredited courses in physical education or movement education.

There were two members in the no training sample group, one female and one male. One teacher taught grade five and the other taught grade six. Both of their classes had between twenty-five and thirty students. Neither teacher was a member of any professional physical education organizations nor had either attended any physical education conferences in the last five years. One teacher had attended two physical education inservices. One teacher had not had any physical education consultant visits in the last five

years, while the other had had three visits. The teachers had taught physical education for five and six years respectively. One teacher taught physical education for 270 minutes per week while the other taught physical education for 68 minutes per week. When preparing their physical education lessons, both teachers utilized various reference materials. When asked to characterize their feelings about teaching physical education one teacher stated he would choose to teach physical education even if he did not have to and stated that he loved teaching the subject. The other teacher stated that she would not choose to teach physical education and characterized her feelings as disliking teaching physical education.

General Training Group

The general training group included teachers who, as a part of their teacher training, had received credit in at least one and not more than seven accredited half courses (three credit hours per course) in physical education or movement education.

The general training group was comprised of five members, two males and three females. Three of these teachers taught grade four, one grade five and one grade six. Class size in this group ranged from twenty-four to thirty-one students. Two of the teachers had no courses in elementary physical education, two had taken two courses and one had taken four courses in elementary school physical

education. Two of the teachers had taken two courses in general physical education while the other three teachers had taken none. One teacher had last taken a course in physical education in the late nineteen-forties, while three others had taken courses between 1965 and 1969 and one teacher had taken a course in physical education in 1971. None of these teachers were members of any professional physical education organizations and only one member had participated in a physical education conference. One teacher had attended ten physical education inservices during the last five years; another had attended two. The remaining teachers had participated in one physical education inservice and one teacher had not attended any such inservice. One teacher had been visited thirteen times by a physical education consultant, one eight times, one twice, one once, and the remaining teacher had not been visited at any time during the last five years by a physical education consultant. One teacher had sixteen years experience and four others had between six and ten years experience teaching elementary physical education. One teacher taught physical education for 380 minutes per week, one taught for 120 minutes per week and the other three teachers taught physical education between 60 and 70 minutes per week. Three teachers utilized other references and teacher guides when preparing their physical education lessons, one teacher only used other references, and one used the guides only to prepare her lessons. Three of the teachers would choose to

teach physical education even if they did not have to, and two teachers would not. Four of the teachers characterized their feelings about teaching physical education as liking it and the remaining teacher claimed indifference towards teaching physical education.

Elementary Physical Education Specialist Group

The elementary physical education specialist group included teachers who, as a part of their teacher training, had received credit in at least eight accredited half courses (three credit hours per course) specific to ages five to twelve in physical education or movement education.

There were two members in the elementary physical education specialist group, one male and one female. One of these teachers taught grade six and the other taught grade four. The class enrollments were twenty-three and twenty-four respectively. Both of these teachers had majored in elementary school physical education. One teacher had taken eight elementary physical education courses, while other teacher had taken twelve. Neither teacher had taken any general physical education courses. They had taken their last courses in physical education in 1972 and 1973 respectively. Neither teacher was a member of any professional physical education organizations, nor had either attended any physical education conferences. Both teachers had participated in two physical education inservices during the last five years. During the last five

years these teachers had been visited by a physical education consultant three and four times respectively. One teacher had sixteen years experience and the other twenty years experience teaching elementary school physical education. One teacher taught physical education 240 minutes per week and the other taught physical education 90 minutes per week. Both would choose to teach physical education even if they did not have to and characterized their feelings about teaching physical education as liking it.

General Physical Education Specialist Group

The general physical education specialist group included teachers who, as a part of their teacher training, had received credit in at least eight accredited half courses (three credit hours per course) in physical education not specific to ages five to twelve.

The general physical education specialist group had only one member, a female. This teacher taught a grade six class with thirty students, had a major in physical education with twenty-one general physical education courses and one course in elementary school physical education. Her last physical education course was in 1974. This teacher was not a member of any professional physical education organizations but had attended five physical education conferences and one physical education inservice during the last five years. A physical education consultant had visited her six times during the last five years. She taught 263

minutes of physical education per week and had one year of experience in teaching elementary school physical education. She would choose to teach physical education even if she did not have to and claimed that she liked teaching the subject.

D. Instrumentation

Robbins (1973) developed seventeen behavioral categories utilizing a framework of four strategies: "teacher structuring", "teacher solicitation", "pupil response", "teacher reacting", and a fifth area of "other". The seventeen categories contained in the five areas are outlined in Table 1.

The present study focussed on teacher behavior rather than pupil behavior in the physical education setting. Robbins' (1973) instrument was designed primarily to identify and analyze teacher behavior and therefore, it was chosen as the instrument to be utilized in this study. Other instruments designed to analyze teacher behavior focus on only one aspect of teacher behavior. Many of these instruments are also restrictive in their employment in a live observation situation. Robbins' instrument was capable of capturing a more complete portrayal of teacher behavior and was designed for live observations. Therefore, Robbins' instrument was ascertained as being the most suitable of the presently available instruments for analyzing teacher behavior in a physical education setting.

Robbins (1973) and Wesson (1973) described the

TABLE 1

CATEGORIES FOR OBSERVING TEACHER BEHAVIOR
IN ELEMENTARY SCHOOL PHYSICAL EDUCATION
(Robbins, 1973, p. 52)

TEACHER STRUCTURING	1. Physical Education centred structuring type behavior
	2. Non-physical education behavior
TEACHER SOLICITING	3. Command, authoritarian directive
	4. Limiting, restricting directive
	5. Open, free directive
	6. Teacher questioning
PUPILS' RESPONSE	7. Pupils' verbal response
	8. Pupils' activity response
	9. Pupils' initiating action
TEACHER REACTING	10. Confirming performance reactions
	11. Confirming behavior reactions
	12. Correcting (rejecting) performance reactions
	13. Correcting behavior reactions
	14. Extending reactions
	15. Focussing reactions
	16. Demonstration
OTHER	17. Silence or Confusion

instrument for analyzing teaching behaviors in elementary school physical education in detail. A further description of the seventeen categories is included in Appendix C.

Before the study was initiated, it was decided to collapse Robbins' (1973) three categories of: "pupils' verbal response", "pupils' activity response", and "pupils' initiating action" into one category of "pupil response". This decision was made because the main concern of this research was teacher behavior. If a codable teacher activity coincided with a pupil response, the teacher activity was given precedence and recorded.

Shortly after observer training was initiated, it was discovered that memorizing numbered categories was difficult and confusing. After discussion with the University of Alberta Division of Educational Research Services, a new letter coded system of categorizing behaviors was implemented. This system facilitated memorizing the categories as the letter codes were more meaningful. The letter codes used in this study are found in Table 2 with the revised behavioral categories.

Once the observer training procedures had been initiated, it became apparent that the observers could not agree on the use of the categories in Robbins' (1973) instrument. Frick and Semmel (1978) suggested training with a criterion or an expert coder, but in this case, neither was available. The categories were therefore redefined to the satisfaction of the other two observers. Categories were

TABLE 2

REVISED CATEGORIES FOR OBSERVING TEACHER BEHAVIOR IN ELEMENTARY SCHOOL PHYSICAL EDUCATION

TEACHER STRUCTURING	PE	Physical Education centred structuring type behavior
	NP	Non-physical education behavior
TEACHER SOLICITING	CO	Command, authoritarian directive
	LI	Limiting, restricting directive
	OP	Open, free directive
	QU	Teacher questioning
PUPILS' RESPONSE	PR	Pupils' response
TEACHER REACTING	CP	Confirming performance reactions
	CB	Confirming behavior reactions
	RP	Correcting (rejecting) performance reactions
	RB	Correcting behavior reactions
	EX	Extending reactions
	FO	Focussing reactions
	DE	Demonstration
OTHER	SC	Silence or Confusion

redefined by compiling the suggestions of the three observers about the categories. The redefinitions, in most cases, served to clarify Robbins' (1973) definitions. (see Appendix D)

A timed interval for observations was introduced to Robbins' (1973) instrument. In previous studies utilizing Robbins' instrument, reference could only be made to such things as proportion of recorded tallies, because each tally did not represent a uniform time unit. The timed interval observations allowed the matrices to be compared statistically. Since Goldberger (1974) suggested using a three or five second time interval, a three second time interval was initially utilized. However, at the first live observation in the training schedule, it was found that this interval was too short. A five second interval was then utilized and was found to be more manageable.

When an observer missed or added an observation, inter-observer synchronization was lost. This error was almost impossible to remedy as there were three hundred to four hundred observations per class. In previous studies utilizing a change of behavior mode for coding behaviors, the volume of observations was not as extensive. To remedy any potential loss of observer synchronization a second and different time signal was superimposed on the tape every twenty observations which indicated to the observer to start a new line of observations. Thus, if inter-observer synchronization was now lost, the line where the error

occurred was relatively simple to find and correct.

Three observers were trained to use the observation instrument. This was done to ensure that on observation days when a reliability measure was being taken, an observer would be available. Ultimately, only one observer was needed.

E. Teacher Training Determination Form

It was not known whether the instrument would indicate any differences in the teaching behavior of teachers with various amounts of teacher training. Three observers attended on observation days when an observer reliability measure was being taken. At this time each observer was required to individually determine by simple observation the type and amount of training a teacher had received. The observers recorded their determinations on a form. (see Appendix E)

The observers also recorded the reasons for their determinations on this form. Teacher training in physical education may have an impact on aspects of the physical education setting which were unaccounted for by Robbins' (1973) instrument. Therefore the observer determinations may highlight the unaccounted for aspects.

F. Observer Training

A manual for training observers was provided by Robbins (1973, p. 144-189). The manual provided a detailed analysis of the categories and two sample lesson transcripts. Once the categories were learned, the observers were to practice coding video-taped lessons and live lessons until a Scott's coefficient of .75 was achieved. The procedures recommended by Robbins were followed as closely as possible.

Initially the investigator and one observer trained to become reliable coders. After several sessions, a decision was made to bring in a third observer to aid in the formulating of criteria for interpretation of the categories.

Approximately two hours was spent discussing and learning the categories before any coding began. Discussions about various categories continued throughout the training program.

The two lesson transcripts provided by Robbins (1973) were coded and discussed. When all three observers agreed on the categories employed to describe the transcripts, practice was begun using video-tapes. Tapes were provided by the University of Alberta Department of Movement Education and the University of Alberta Department of Secondary Education. These tapes did not specifically focus on teacher behavior but, time did not allow for recording new tapes. Approximately fourteen hours were spent coding video-tapes.

Arrangements were made to observe six thirty-minute sessions of a grade three class, and six thirty-minute sessions of a grade four class. Due to unforeseen circumstances only four sessions of each class were observed. Live observations were interspersed with video-taped observations to expedite the training program.

The last live observation was to have been the session where reliability measures were obtained. Since this class was cancelled, the first observation in the observation schedule was used for this purpose.

G. Observer Objectivity and Reliability

The researcher established observer reliability and objectivity by testing herself against another trained observer at ten sessions throughout the observation schedule. One out of every three observations per teacher was carried out with a second observer to establish observer objectivity and reliability.

Robbins (1973, p. 60) utilized Scott's (1955) coefficient technique at a critical level of .75 to .80 as described by Flanders (1966) as a means of testing inter- and intra-judge agreement. Flanders (1966, p. 13) found that Bales' adaptation of chi-square was less appropriate than Scott's (1955) coefficient, because Scott's coefficient is unaffected by low frequencies; can be adapted to percent figures; can be estimated more rapidly in the field; and is more sensitive at higher levels of reliability.

Scott (1955) described the coefficient as a method of reporting the extent of inter-observer agreement in assigning overt or verbal behaviors to a set of categories. The requirements for utilizing Scott's coefficient are that the nominal scale categories be mutually exclusive and that observations be duplicated in a random sample of the total set of responses being studied. Mitchell (1969) maintained that Flanders inappropriately utilized Scott's coefficient, whereas Anderson (1972) maintained that Scott's coefficient was used correctly because Flanders' scale was nominal, categories were mutually exclusive and observations were capable of being duplicated.

Flanders (1966) cautioned that interaction results must be interpreted cautiously because, when utilizing Scott's coefficient, the error increases with the decreasing frequency of a category. It should also be noted that Scott's coefficient is concerned with percentage agreement and is insensitive to the order in which the observations were made.

Flanders (1966) stated that if reliability levels of .85 were obtained, then, analysis should be considered adequate. Due to the increase in categories, from ten to seventeen, and also the addition of the non-verbal interaction response, Robbins (1973) altered the acceptable level to .75.

Flanders (1966) and Browne (1971) indicated that Scott's coefficient was not totally adequate, but contended

that it was the best available at that time. Letters were sent to Dr. Flanders, Dr. Robbins, Mr. Pickard, and the University of Alberta Division of Educational Reasearch Services, to ascertain whether Scott's coefficient was still the best available. Each expert in analyzing interaction data responded to the letter (Appendix F) stating that Scott's coefficient was still the best coefficient available to establish observer objectivity and reliability.

Scott's coefficient is described in Appendix G and the calculations of the ten observation reliability checks may be found in Appendix H. The average Scott's coefficient achieved was .795. The ten coefficients ranged from .74 to .85. From these figures it was ascertained that the data collected was objective and reliable.

Observer bias was minimized as none of the observers were aware of the amount of training a teacher had received in physical education. This information was obtained after the third observation.

H. Data Collection

The raw data in this study consisted of behavioral categories coded on keypunch sheets. This method of coding allowed the researcher to move directly to keypunching without having to transcribe 13,000 pieces of original data.

Robbins (1973) and Pickard (1974) each observed three lessons per subject. The observational schedule involved three consecutive visits to each classroom so that the

continuity of the lessons could be preserved.

The equipment consisted of a Sony cassette tape recorder with two ear jacks. A forty-five minute tape of time signals was sufficient for each class.

The coding procedures described earlier were followed.

I. Data Analysis and Display

According to Flanders (1970) approximately 400 observations are necessary in order to construct a matrix. As Flanders' system contained ten categories and the revised Robbins' system contained fifteen categories, it was necessary to have approximately 900 observations per matrix, to account for the larger number of categories which may have resulted in low frequencies in some cells. A five second interval for observations, in a thirty minute class, produced 360 observations per class. Three classes produced 1080 observations which allowed for the construction of the matrices.

Yakes (1973) and Anderson (1978) in their studies based on the Observation System for the Analysis of Primary Reading Lessons (Browne, 1971), utilized the University of Alberta computer program, Test 13, to generate information about the raw data. Procedures were undertaken to produce the following:

a. 15 X 15 matrix for each teacher.

b. Total frequency of behavior.

c. Frequency of each category.

d. Percent frequency of each category.

e. Frequency of each cell.

f. Percent frequency of each cell.

g. Percentage of command directive/response cycle represented by the sum of: CO-PR, CO-CO, PR-CO.

h. Percentage of limiting directive/response cycle represented by the sum of: LI-PR, LI-LI, PR-LI.

i. Percentage of open directive/response cycle represented by the sum of: OP-PR, OP-OP, PR-OP.

j. Percentage of the question/response cycle represented by the sum of: QU-PR, QU-QU, PR-QU.

k. Percentage of teacher reaction of praise or confirming performance represented by the sum of: PR-CP, CP-CP, CP-PR.

l. Percentage of teacher correcting (rejecting) performance represented by the sum of: PR-RP, RP-RP, RP-PR.

m. Percentage of teacher reaction of praise or confirming behavior represented by the sum of: PR-CB, CB-CB, CB-PR.

n. Percentage of teacher correcting (rejecting) behavior represented by the sum of: PR-RB, RB-RB, RB-PR.

o. Percentage of the teacher coaching/response cycle represented by the sum of: PR-EX, PR-FO, EX-PR, FO-PR, EX-EX, FO-FO, EX-FO, FO-EX.

p. Darwin chi-square comparisons:

1) within groups,

2) between groups.

q. Comparison of proportions of categories:

1) within group,

2) between groups.

r. Comparison of proportions of cells:

1) within groups,

2) between groups.

s. Comparison of proportion of patterns of behavior:

1) within groups,

2) between groups.

It is inappropriate to statistically compare interaction matrices utilizing a chi-square because it is insensitive to sequence (Flanders, 1966). To test whether two distributions are significantly different, a Darwin chi-square (Darwin, 1959) was utilized. The Darwin chi-square is more appropriate because it is based on the assumption that each event affects probabilities of the succeeding event, or is one-dependent. Flanders (1966) stated that interaction events are more than one-dependent but the additional dependence is not as significant.

The subjects were divided into four groups according to the amount of training they had received in physical education. The groups were: Elementary Physical Education Specialist; General Physical Education Specialist; General Training; and No Training. The Darwin chi-square was used to compare within group matrices and between group matrices.

To aid in visualizing the findings of this study, the data was interpreted in terms of proportions. To determine whether proportions of each category, cell, or pattern of behavior differed significantly at the .01 level, between groups, and within groups, a Chi-square procedure was applied. In previous studies a Z-test or a Tukey procedure was applied but as Test 13 generated a chi-square comparison of proportions it was decided in consultation with the University of Alberta Division of Educational Research Services to use it.

J. Summary

Ten teachers were observed for three consecutive thirty minute classes while teaching games lessons. Observations were made on a five second time interval basis and categories recorded on a score sheet then, keypunched for analysis. Test 13 was used to analyze the data.

Observer objectivity and reliability were established by having a second observer present at ten observations, one out of every three for each teacher. An average Scott's coefficient of .795 was achieved and, as such the data was ascertained as being objective and reliable.

The study was primarily designed to identify common teaching behaviors between teachers with similiar amounts of teacher training in physical education. The following analysis will attempt to describe the impact various amounts of teacher training in physical education had on teaching

behavior. There is no intention to suggest that one teaching behavior is any more effective or superior than any other.

IV. RESULTS AND DISCUSSION

This chapter describes the results of the analysis of the data collected. The first section reports the within group analyses, the second section describes the between group analyses and the final section gives an account of the results of the teacher training determination forms.

A matrix was constructed, from the data collected in the observation sessions, for each teacher. (see Appendix I) All of the following statistical analyses were performed utilizing the information from these matrices.

Following Flanders (1970) lead the significance level for all statistical analyses was set at .01.

A. Comparisons of Category Usage Within Groups

A summary of the proportion of tallies devoted to various categories by various teachers may be found in Table 3. These proportions are the column totals of the matrices.

The category of physical education structuring represented by PE was the second most frequently recorded category. This category was utilized an average of 20.7% of the teaching time. Teacher 07 of the general training group utilized physical education structuring more frequently than any other teacher: 33% of the time. Teacher 06 of the general training group utilized this category 16.1% of the teaching time, less than any other teacher.

TABLE 3

PROPORTION OF TALLIES DEVOTED TO EACH CATEGORY BY TEACHER

Category	GEN 03	GEN 04	GEN 06	GEN 10	GEN 07	ELS 05	ELS 08	NT 02	NT 09	PES 01
PE	16.8	20.3	16.1	19.1	33.0	17.5	23.2	27.0	25.6	23.1
NP	1.4	0.7	1.2	0.6	2.2	0.1	0	0.6	0	0.9
CO	7.9	4.9	7.5	9.6	6.4	5.5	5.3	4.4	6.6	4.9
LI	0.3	0.3	0.3	0	0	1.0	0.2	0.1	0.3	0
OP	0	0	0	0	0	0.5	0	0	0.2	0
QU	1.0	1.1	2.2	0.8	1.9	1.8	0.9	1.1	1.4	0.6
PR	46.7	48.8	59.9	57.5	34.1	49.6	44.8	50.8	46.5	58.2
CP	1.9	3.3	0.1	0.5	2.5	2.9	0.2	0.4	0.5	0
CB	0	0	0	0	0	0	0	0	0	0
RP	1.4	0.9	0.9	0.8	0.4	1.4	1.7	0.4	0.6	0.4
RB	0.6	1.2	1.4	4.3	3.3	1.7	1.5	3.9	0.6	0.9
EX	2.7	0.6	1.1	0.3	0.1	2.1	1.8	0.4	0.3	0.1
FO	9.6	11.6	6.2	4.4	9.2	9.0	18.0	6.4	7.9	8.0
DE	6.8	5.6	1.3	0.4	4.7	6.3	2.2	2.7	9.6	1.2
SC	2.8	0.9	1.8	1.6	2.1	0.6	0.2	1.7	0	1.7

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

Non-physical education structuring, represented by NP, was utilized an average of 0.7% of the teaching time. Teacher 08 of the elementary physical education specialist group and teacher 09 of the no training group never utilized this category. Teacher 07 of the general training group recorded this category more frequently than any other teacher: 2.2% of the time.

The command directive, represented by CO, was the most frequently used teacher solicitation. This category was recorded an average of 6.3% of the teaching time. Teacher 10 of the general training group utilized this category more frequently than any other teacher: 9.6% of the teaching time. Teacher 02 of the no training group used the command directive 4.4% of the time, less than any other teacher.

The limiting directive represented by LI was utilized an average of .25% of the teaching time. Teacher 05 of the elementary physical education specialist group utilized this category most frequently: 1% of the teaching time. Teachers 07 and 10 of the general training group and teacher 01 of the general physical education specialist group never utilized this category.

The open directive represented by OP was only utilized by two teachers. Teacher 05 of the elementary physical education specialist group recorded this category .5% of the time and teacher 09 of the no training group utilized it .2% of the teaching time.

Teacher questioning represented by QU was utilized an

average of 1.28% of the teaching time. Teacher 06 of the general training group utilized this category most frequently: 2.2% of the time. Teacher 01 of the general physical education specialist group recorded teacher questioning .6% of the time, less than any other teacher.

The pupil response category represented by PR was the most frequently recorded category in all cases. This category was recorded an average of 49.7% of the teaching time. Teacher 06 of the general training group had this category registered most frequently: 59.9% of the time. Teacher 07 of the general training group had this category recorded the least: 34.1% of the teaching time. It should be noted that these percentages do not accurately represent the amount of student activity in a class because this category was only coded when a codable teacher activity did not coincide with it.

The confirming performance category represented by CP was utilized an average of 1.2% of the teaching time. Teacher 04 of the general training group utilized this category more frequently than any other teacher: 3.3% of the time. Teacher 01 of the general physical education specialist group never utilized this behavior.

Confirming behavior represented by CB was never recorded by any teacher.

The correcting or rejecting performance category represented by RP was used an average of .89% of the teaching time. Teacher 08 of the elementary physical

education specialist group used this category more frequently than any other teacher: 1.7% of the teaching time. Teacher 07 of the general training group, teacher 02 of the no training group, and teacher 01 of the general physical education specialist group utilized this category .4% of the teaching time, less than any other teacher.

Correcting or rejecting behavior represented by RB was recorded an average of 1.94% of the teaching time. Teacher 07 of the general training group utilized this category more frequently than any other teacher: 3.3% of the teaching time. Teacher 03 of the general group and teacher 09 of the no training group recorded this category .6% of the teaching time, less than any other teacher.

The extending performance category represented by EX was utilized an average of .95% of the teaching time. Teacher 03 of the general training group recorded this category 2.7% of the teaching time, more frequently than any other teacher. Teacher 07 of the general training group and teacher 01 of the general physical education specialist group utilized this teacher reaction .1% of the time, less frequently than the other teachers.

Teacher focussing represented by FO was the most frequently recorded teacher reaction. It was utilized an average of 9% of the teaching time. Teacher 08 of the elementary physical education specialist group utilized this category more frequently than the other teachers: 18% of the teaching time. Teacher 10 of the general training group

utilized focussing 4.4% of the time, less than the other teachers.

Demonstration represented by DE was utilized an average of 4% of the teaching time. Teacher 09 of the no training group recorded this category 9.6% of the teaching time, more frequently than any other teacher. Teacher 10 of the general training group utilized this category less than the other teachers: 0.4% of the teaching time.

The silence or confusion category represented by SC occurred an average of 1.34% of the teaching time. Teacher 03 of the general training group had this category recorded 2.8% of the time, more frequently than any other teacher. Teacher 09 of the no training group never utilized this category.

A comparison of column totals was tabulated for each teacher matrix and analyzed to ascertain whether teachers with similiar training exhibit significantly different usage of the categories. A summary of these comparisons may be found in Table 4. No within group comparisons could be made with the general physical education specialist group as this group had only one member.

The null hypothesis that teachers with similiar training do not exhibit significantly different usage of the categories was rejected in all cases at the .001 level of significance. The categories which contributed the most to this significant difference were: physical education structuring, demonstration, focussing, and pupil response.

TABLE 4

COMPARISONS OF COLUMN TOTALS WITHIN GROUPS

Teacher	Chi-Square	DF	Prob*	Categories With More Than 5% Difference in Usage
GEN 03/04	45.802	12	.001	None
GEN 03/06	96.081	12	.001	PR 13.2% DE 5.5%
GEN 03/10	130.292	12	.001	PR 10.8% FO 5.2% DE 6.4%
GEN 04/06	109.766	12	.001	PR 11.1% FO 5.4%
GEN 04/10	124.797	12	.001	PR 8.7% FO 7.2% DE 5.2%
GEN 06/10	43.365	12	.001	None
GEN 07/03	132.302	12	.001	PE 16.2% PR 12.6%
GEN 07/04	99.957	12	.001	PE 12.7% PR 14.7%
GEN 07/06	210.006	12	.001	PE 16.9% PR 25.8%
GEN 07/10	162.311	11	.001	PE 13.9% PR 23.4%
NT 02/09	77.051	13	.001	DE 6.9%
ELS 05/08	136.099	13	.001	PE 5.7% FO 9.0%

GEN: general training group
NT: no training group
ELS: elementary physical education specialist

*Prob: Probability

When teacher 03 was compared with teacher 04 and teacher 06 of the general training group, no one category contributed more than 5% of the significance.

When teacher 07 was compared with any other teacher in the general training group, physical education structuring or pupil response contributed the most to the significance.

When teacher 10 was compared with teachers 03 and 04 of the general training group, pupil response, focussing and demonstration contributed the most to the significance.

When teacher 06 was compared with teachers 03 and 04 of the general training group, pupil response contributed the most to the significance. Demonstration also contributed to the significant difference between teachers 03 and 06, while focussing also contributed to the difference between teachers 04 and 06.

When teachers 02 and 09 of the no training group were compared, demonstration was the only category which contributed more than 5% of the significance.

When teachers 05 and 08 of the elementary physical education specialist group were compared, physical education structuring and focussing were found to contribute the most to the significance.

All of the paired teachers indicated a significant difference in category usage. The categories which contributed the most to this significance were: physical education structuring, pupil response, focussing, and demonstration. For seven out of ten teachers, these

categories were four of the five most frequently recorded categories.

B. Comparisons of Teaching Patterns Within Groups

Teaching patterns were examined within groups to ascertain whether teachers with similiar training exhibit significantly different usage of various teaching patterns.

Teacher Soliciting/Response Cycles

The teacher soliciting/response cycles were examined within groups. The results are reported in Table 5.

The first pattern of teaching examined was the command directive (CO)/response (PR) cycle represented by the sum of: CO-PR, CO-CO, PR-CO. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the command directive/response pattern was rejected in nine cases at the .001 level of significance. The analysis between teachers 03 and 04 in the general training group, teachers 06 and 10 in the general training group and teachers 02 and 09 in the no training group accepted the null hypothesis.

Teachers 06 and 10 of the general training group, and teacher 01 of the general physical education specialist group utilized the command directive/response cycle more than 50% of the teaching time. The elementary physical education specialist 05, and teachers 02 and 09 of the no training group utilized this pattern between 40% and 50% of

TABLE 5

COMPARISONS OF TEACHER SOLICITING/RESPONSE CYCLES

WITHIN GROUPS

(degrees of freedom = 1)

	Command/ Response Cycle		Limiting/ Response Cycle		Open/ Response Cycle		Question/ Response Cycle	
Teacher	X^2	Prob*	X^2	Prob.	X^2	Prob.	X^2	Prob.
GEN 03/04	0.15	NS	0.02	NS	0.0	NS	0.03	NS
GEN 03/06	46.44	.001	0.32	NS	0.0	NS	5.14	NS
GEN 03/10	35.12	.001	1.79	NS	0.0	NS	1.42	NS
GEN 04/06	54.50	.001	0.00	NS	0.0	NS	3.62	NS
GEN 04/10	41.30	.001	0.88	NS	0.0	NS	0.57	NS
GEN 06/10	0.19	NS	0.26	NS	0.0	NS	1.09	NS
GEN 07/03	53.36	.001	2.56	NS	0.0	NS	0.03	NS
GEN 07/04	49.94	.001	1.34	NS	0.0	NS	0.0	NS
GEN 07/06	203.75	.001	0.47	NS	0.0	NS	3.63	NS
GEN 07/10	168.10	.001	0.00	NS	0.0	NS	0.57	NS
NT 02/09	0.12	NS	0.17	NS	0.05	NS	1.01	NS
ELS 05/08	15.99	.001	0.47	NS	2.99	NS	2.01	NS

GEN: general training group
NT: no training group
ELS: elementary physical education specialist

*Prob: Probability

the time. General training teachers 03 and 04, and elementary physical education specialist 08 utilized this pattern between 30% and 40% of the teaching time. Teacher 07 of the general training group utilized the command directive/response pattern between 20% and 30% of the time. In all cases this pattern of teaching was the most frequently used. Teacher 06 of the general training group used it more frequently than any other teacher: 53% of the teaching time, while teacher 07 of the general training group utilized it less frequently than any other teacher: 22.6% of the time.

The limiting directive (LI)/response (PR) cycle represented by the sum of: LI-PR, LI-LI, PR-LI, was the next pattern of teaching examined. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the limiting directive/response cycle was accepted in all cases.

All of the teachers utilized the limiting directive/response cycles less than 1% of the teaching time. Teachers 07 and 10 of the general training group and teacher 01 of the general physical education specialist group never utilized this pattern of teaching.

The open directive (OP)/response (PR) cycle represented by the sum of: OP-PR, OP-OP, PR-OP, was examined within groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the open directive/response cycle was accepted in all cases.

Elementary physical education specialist 05 and teacher 09 of the no training group were the only teachers to utilize the open directive/response cycle.

The question (QU)/response (PR) cycle represented by the sum of: QU-PR, QU-QU, PR-QU, was then examined. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the question/response cycle was accepted in all cases.

Teacher 06 of the general training group, teacher 05 of the elementary physical education specialist group, and teacher 02 of the no training group utilized the question/response pattern between 1% and 2% of the teaching time. The remaining teachers utilized this teaching cycle less than 1% of the time.

The only teacher soliciting/response cycle that indicated any significant differences within groups was the command directive/response cycle.

Three pairs of teachers did not differ significantly when comparing any teacher soliciting/response cycle: teachers 03 and 04, 06 and 10, and 02 and 09.

A summary of the percentage use of teacher soliciting/response cycles by individual teachers is presented in Table 6.

Teacher Reacting/Response Cycles

Teacher reacting/response cycles were examined within groups. The results are reported in Table 7.

TABLE 6

PERCENTAGE USAGE OF TEACHER SOLICITING/RESPONSE CYCLES

BY TEACHER

Teacher	Command/ Response Cycle	Limiting/ Response Cycle	Open/ Response Cycle	Question/ Response Cycle
GEN 03	37.7%	0.4%	0.0%	0.4
GEN 04	36.9%	0.3%	0.0%	0.6%
GEN 06	53.0%	0.2%	0.0%	1.4%
GEN 10	52.0%	0.0%	0.0%	0.9%
GEN 07	22.6%	0.0%	0.0%	0.6%
ELS 05	40.0%	0.4%	0.4%	1.5%
ELS 08	32.5%	0.2%	0.0%	0.9%
NT 02	40.5%	0.1%	0.0%	1.1%
NT 09	41.3%	0.2%	0.2%	0.6%
PES 01	50.9%	0.0%	0.0%	0.5%

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

TABLE 7

COMPARISONS OF TEACHER REACTING/RESPONSE CYCLES

WITHIN GROUPS

(degrees of freedom = 1)

	Confirming Performance /Response Cycle		Correcting Performance /Response Cycle		Correcting Behavior /Response Cycle		Teacher Coaching /Response Cycle	
Teacher	X^2	Prob*	X^2	Prob.	X^2	Prob.	X^2	Prob.
GEN 03/04	13.96	.001	1.55	NS	0.03	NS	0.41	NS
GEN 03/06	13.09	.001	4.05	NS	3.63	NS	17.35	.001
GEN 03/10	4.08	NS	0.68	NS	23.30	.001	17.20	.001
GEN 04/06	44.44	.001	0.63	NS	4.56	NS	23.92	.001
GEN 04/10	25.58	.001	0.12	NS	26.54	.001	22.92	.001
GEN 06/10	1.52	NS	1.20	NS	11.21	.001	0.14	NS
GEN 07/03	4.51	NS	11.34	.001	14.86	.001	0.18	NS
GEN 07/04	3.13	NS	5.37	NS	17.21	.001	1.20	NS
GEN 07/06	28.43	.001	1.67	NS	4.99	NS	14.53	.001
GEN 07/10	14.18	.001	5.15	NS	1.50	NS	14.63	.001
NT 02/09	0.00	NS	0.04	NS	15.44	.001	1.54	NS
ELS 05/08	41.56	.001	0.40	NS	0.11	NS	91.56	.001

GEN: general training group
NT: no training group
ELS: elementary physical education specialist

*Prob: Probability

The teacher reaction of praising or confirming performance (CP)/response (PR) cycle represented by the sum of: CP-PR, CP-CP, PR-CP, was examined within groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the the praising or confirming performance/response cycle was accepted in five cases, and rejected in seven cases at the .001 level of significance.

Teacher 04 of the general training group utilized the teacher reaction of praising or confirming performance/response cycle 4.4% of the teaching time. Teacher 05 of the elementary physical education specialist group utilized this teacher reaction pattern 3.6% of the teaching time. Teacher 07 of the general training group utilized this cycle 2.9% of the time and teacher 03 of the general training group recorded it 1.5% of the teaching time. The remaining teachers used the teacher reaction of praising or confirming performance/response pattern less than 1% of the time.

The teacher reaction of correcting or rejecting performance (RP)/response (PR) pattern represented by the sum of: RP-PR, RP-RP, PR-RP, was then examined. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the teacher reaction of correcting or rejecting performance/response pattern was accepted in eleven cases. Teachers 03 and 07 of the general training group differed significantly at the

.001 level of significance.

Teachers 03, 04 and 10 of the general training group and teachers 05 and 08 of the elementary physical education specialist group utilized correcting or rejecting performance/response patterns between 1% and 2% of the teaching time. The remaining teachers recorded this pattern less than 1% of the teaching time.

The analysis of the teacher reaction of praising or confirming behavior (CB)/response (PR) pattern represented by the sum of: CB-PR, CB-CB, PR-CB, was ascertained as not being significant as no teacher utilized this pattern of teaching.

The teacher reaction of correcting or rejecting behavior (RB)/response (PR) pattern represented by the sum of: RB-PR, RB-RB, PR-RB, was examined within groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of correcting or rejecting behavior/response cycles was accepted in six cases and rejected in six cases at the .001 level of significance.

Teacher 10 in the general training group utilized the teacher reaction of correcting or rejecting behavior/response pattern 4.3% of the teaching time. Teacher 07 of the general training group and teacher 02 of the no training group utilized this teacher reaction pattern between 3% and 4% of the teaching time. Teacher 06 of the general training group and teachers 05 and 08 of the elementary physical education specialist group recorded this

cycle between 1% and 2% of the teaching time. Teachers 03 and 04 of the general training group, teacher 09 of the no training group and teacher 01 of the general physical education specialist group utilized this teacher reaction cycle less than 1% of the teaching time.

The teacher coaching (FO,EX)/response (PR) cycle represented by the sum of: PR-EX, PR-FO, EX-PR, FO-PR, EX-EX, FO-FO, EX-FO, FO-EX, was examined within groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of teacher coaching/response pattern was accepted in five cases. Seven cases were rejected at the .001 level of significance.

Teacher 08 of the elementary physical education specialist group utilized the coaching/response pattern 27.1% of the teaching time. Teachers 03, 04 and 07 of the general training group, teacher 05 of the elementary physical education specialist group and teacher 01 of the general physical education specialist group utilized this teaching cycle between 10% and 15% of the teaching time. Teachers 06 and 10 of the general training group and teacher 02 of the no training group utilized this cycle between 5% and 10% of the teaching time. In all cases this teaching cycle was the second most frequently used.

Each of the pairs of teachers indicated a significant difference in at least one teacher reacting/response cycle. Four pairs differed in one cycle, seven pairs in two cycles, and one pair in three teacher reacting/response cycles.

A summary of the percentage of use of teacher reacting/response cycles is presented in Table 8.

C. Comparisons of Teacher Matrices Within Groups

A matrix was constructed for each teacher and compared utilizing a Darwin chi-square. The results are reported in Table 9. The null hypothesis that teachers with similiar training do not exhibit significantly different teaching behaviors was accepted in eleven out of twelve cases. Teacher 07 and 06 in the general training group differed significantly at the .01 level, thus rejecting the null hypothesis.

No within group comparisons could be made with the general physical education specialist group as this group had only one member.

D. Comparisons of Category Usage Between Groups

A summary of the proportion of tallies devoted to various categories by various groups may be found in Table 10. These proportions are the column totals of the matrices.

The category of physical education structuring represented by PE, was used most frequently by the no training group. The no training group utilized this category 26.5% of the teaching time. Physical education structuring accounted for 23.1% of the class time of the general physical education specialists, 21.2% of the time of the general training group while the elementary physical

TABLE 8

PERCENTAGE OF TEACHER REACTING/RESPONSE CYCLES

BY TEACHER

Teacher	Confirming Performance /Response Cycle	Correcting Performance /Response Cycle	Correcting Behavior /Response Cycle	Teacher Coaching /Response Cycle
GEN 03	1.5%	1.6%	0.8%	13.7%
GEN 04	4.4%	1.0%	0.7%	14.7%
GEN 06	0.1%	0.7%	1.7%	7.9%
GEN 10	0.5%	1.1%	4.3%	7.5%
GEN 07	2.9%	0.2%	3.2%	13.1%
ELS 05	3.6%	1.6%	1.2%	12.4%
ELS 08	0.2%	1.9%	1.3%	17.1%
NT 02	0.6%	0.4%	3.4%	9.0%
NT 09	0.5%	0.5%	0.5%	10.8%
PES 01	0.0%	0.6%	0.8%	12.4%

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

TABLE 9

DARWIN CHI-SQUARE COMPARISONS

WITHIN GROUPS

(degrees of freedom = 210)

Teacher	Darwin Chi-Square	Converted Z-Score	Prob*
GEN 03/04	139.48	-3.7674	NS
GEN 03/06	184.62	-1.2539	NS
GEN 03/10	190.48	-0.9513	NS
GEN 04/06	209.18	-0.0156	NS
GEN 04/10	190.16	-0.9677	NS
GEN 06/10	157.44	-2.7246	NS
GEN 07/03	181.62	-1.4106	NS
GEN 07/04	167.24	2.1807	NS
GEN 07/06	278.13	3.1157	.01
GEN 07/10	182.46	-1.3666	NS
NT 02/09	160.72	-2.5407	NS
ELS 05/08	257.42	2.2206	NS

GEN: general training group
NT: no training group
ELS: elementary physical education specialist

*Prob: Probability

TABLE 10

PROPORTION OF TALLIES DEVOTED TO EACH CATEGORY BY GROUP

Category	Elementary Phys. Ed. Specialist	General Phys. Ed. Specialist	General Training	No Training
Phys. Ed. Structuring	20.3	23.1	21.2	26.5
Non-Phys. Ed. Structuring	.1	.9	1.3	.4
Command Directive	5.4	4.9	7.1	5.3
Limiting Directive	.6	0	.2	.2
Open Directive	.3	0	0	.1
Questioning	1.4	.6	1.4	1.2
Pupil Response	47.3	58.2	49.1	49.1
Confirming Performance	1.6	0	1.7	.4
Confirming Behavior	0	0	0	0
Correcting Performance	1.5	.4	.8	.5
Correcting Behavior	1.6	.9	2.1	2.6
Extending	1.9	.1	1.0	.4
Focussing	13.4	8.0	8.4	7.0
Demonstration	4.3	1.2	3.8	5.4
Silence or Confusion	.4	1.7	1.8	1.0

education specialists recorded this category 20.3% of the teaching time. In all cases this was the second most frequently recorded behavior.

Non-physical education structuring represented by NP was utilized by the general training group 1.3% of the time, by the general physical education specialists .9% of the time, by the no training group .4% of the time and by the elementary physical education specialists .1% of the teaching time. Non-physical education structuring was the most infrequently observed category for the elementary physical education specialists.

The command directive represented by CO was the most frequently used teacher solicitation used by any group. The general training group utilized this directive 7.1% of the teaching time, the elementary physical education specialists 5.4% of the time, the no training group 5.3% of the time, and the general physical education specialists 4.9% of the teaching time.

The limiting directive represented by LI was never utilized by the general physical education specialists. The general training and no training groups utilized this type of solicitation .2% of the teaching time, and the elementary physical education specialists gave limiting directives .6% of the teaching time.

The open directive represented by OP was utilized by the elementary physical education specialists .3% of the teaching time, and by the no training group .1% of the time.

The general physical education specialists and the general training groups never utilized this teaching behavior. This behavior was the most infrequently used category by the no training and general training groups.

Teacher questioning represented by QU occurred in the elementary physical education specialists' and general training groups' classes 1.4% of the teaching time. The no training group utilized this category 1.2% of the time and the general physical education specialists .6% of the teaching time.

The pupil response category represented by PR was the most frequently recorded category in all cases. The general physical education specialists registered this category 58.2% of the teaching time, the general and no training groups 49.1% of the time, and by the elementary physical education specialists 47.3% of the teaching time. It must be remembered that this category does not necessarily represent the total amount of student activity as it was only recorded if a codable teacher activity did not coincide with it.

The confirming performance category represented by CP was never utilized by the general physical education specialist group. The general training group utilized this category 1.7% of the teaching time, the elementary physical education specialists 1.6% of the time and by the no training group .4% of the teaching time.

The confirming behavior category represented by CB was never utilized by any of the training groups. Robbins (1973)

and Pickard (1974) also found that this category was not utilized by elementary physical education teachers.

The correcting or rejecting performance category represented by RP was utilized by the elementary physical education specialists 1.5% of the teaching time, by the general training group .8% of the time, by the no training group .5% of the time, and by the general physical education specialists .4% of the teaching time.

The correcting or rejecting behavior category represented by RB was used more frequently than confirming behavior, confirming performance, and correcting performance categories in three out of four training groups. The elementary physical education specialists used this category with the same frequency as the confirming performance category, but more than either confirming behavior or correcting performance. The no training group utilized correcting behavior 2.6% of the teaching time, the general training group 2.1% of the time, the elementary physical education specialists 1.6% of the time, and the general physical education specialists .9% of the teaching time.

The extending performance category represented by EX was utilized by the elementary physical education specialists most frequently: 1.9% of the teaching time. The general training group used this category 1% of the time, the no training group .4% of the time, and the general physical education specialists .1% of the teaching time.

Teacher focussing represented by FO was the third most

frequently used category in all cases. It was also the most frequently used teacher reaction category. The elementary physical education specialists recorded this category 13.4% of the teaching time, the general training group 8.4% of the time, the general physical education specialists 8% of the time, and the no training group utilized focussing 7% of the teaching time.

Demonstration represented by DE comprised 5.4% of the teaching time for the no training group. The elementary physical education specialists utilized this category 4.3% of the time, the general training group 3.8% of the time, and the general physical education specialists 1.2% of the teaching time.

The silence or confusion category represented by SC occurred in the general training group's classes 1.8% of the teaching time. The general physical education specialists recorded this category 1.7% of the time, the no training group 1% of the time, and the elementary physical education specialists .4% of the teaching time.

A comparison of column totals was tabulated for each group matrix and analyzed to ascertain whether different training groups exhibited significantly different usage of the categories. A summary of these comparisons may be found in Table 11.

The null hypothesis that teachers with similiar training do not exhibit significantly different usage of categories than teachers with different amounts of training

TABLE 11

COMPARISONS OF COLUMN TOTALS

BETWEEN GROUPS

Group	Chi-square	Degrees of freedom	Prob*	Categories with more than 5% difference in usage
GEN/NT	74.462	13	.001	PE 5.3%
PES/GEN	84.753	12	.001	PR 9.1%
PES/NT	72.439	13	.001	PR 9.1%
ELS/NT	123.628	13	.001	PE 6.2% FO 6.4%
ELS/PES	157.437	13	.001	PR 10.9% FO 5.4%
ELS/GEN	153.846	13	.001	FO 5.0%

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

*Prob: Probability

was rejected in all cases at the .001 level of significance.

The categories which contributed the greatest to this significance were: physical education structuring, pupil response, and teacher focussing reactions.

The no training group when compared with the general training group and the elementary physical education specialists, showed that the category of physical education structuring contributed most to the significant difference when comparing column totals.

When the general physical education specialists were compared with the other three training groups the category which contributed the most to the significant difference was pupil response. The general physical education specialists indicated an average of 9.7% more occurrence of the category pupil response than the other three groups.

The teacher focussing category was shown to contribute the most to the significant between group difference when the elementary physical education specialists were compared with the other three training groups. The elementary physical education specialists utilized this category an average of 5.6%: more than any other group.

All of the sample groups indicated a significant difference in category usage. The categories which contributed the most to this difference were: physical education structuring, pupil response and focussing, the three most frequently recorded categories for all groups.

E. Comparisons of Teaching Patterns Between Groups

Teaching patterns were examined between groups to ascertain whether teachers with different amounts of training exhibited significantly different usage of various teaching patterns.

Teacher Soliciting/Response Cycles

The teacher soliciting/response cycles were examined between groups. The results are reported in Table 12.

The first pattern of teaching examined was the command directive (CO)/response (PR) cycle represented by the sum of: CO-PR, CO-CO, PR-CO. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the command directive/response pattern than teachers with different amounts of training was rejected in two cases at the .01 level of significance and in three cases at the .001 level. The general training group and the no training group did not differ significantly and accepted the null hypothesis.

The elementary physical education specialists utilized the command directive/response cycle 36.4% of the teaching time, the general training group 40% of the time, the general physical education specialist 50.9% of the time, while the no training group utilized this cycle 40.8% of the teaching time. The elementary physical education specialist group utilized this teacher solicitation less than any other group.

TABLE 12

COMPARISONS OF

TEACHER SOLICITING/RESPONSE CYCLES

BETWEEN GROUPS

(degrees of freedom = 1)

	Command/ Response Cycle		Limiting/ Response Cycle		Open/ Response Cycle		Question/ Response Cycle	
Group	X^2	Prob*	X^2	Prob.	X^2	Prob.	X^2	Prob.
GEN/NT	0.30	NS	.05	NS	.31	NS	0.19	NS
PES/GEN	42.92	.001	.98	NS	.00	NS	1.28	NS
PES/NT	27.17	.001	.17	NS	.05	NS	1.72	NS
ELS/NT	8.39	.01	.44	NS	.47	NS	1.10	NS
ELS/PES	67.10	.001	1.62	NS	.87	NS	4.63	NS
ELS/GEN	9.53	.01	.48	NS	6.50	NS	3.79	NS

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

*Prob: Probability

The limiting directive (LI)/response (PR) cycle represented by the sum of: LI-PR, LI-LI, PR-LI was compared between groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the limiting directive/response cycle than teachers with different amounts of training was accepted in all cases.

The elementary physical education specialists utilized the limiting directive/response cycle .3% of the teaching time, the general training group .2% of the time, the general physical education specialists 0% of the time, while the no training group used it .1% of the teaching time. The elementary physical education specialist group utilized this teacher solicitation more than any other group.

The open directive (OP)/response (PR) cycle was then compared between groups. This cycle is represented by the sum of: OP-PR, OP-OP, PR-OP. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the open directive/response cycle than teachers with different amounts of training was accepted in all cases.

The elementary physical education specialists utilized the open directive/response cycle .2% of the teaching time, the general training group 0% of the time, the general physical education specialists 0% of the time, while the no training group utilized this solicitation .1% of the teaching time. The elementary physical education specialist

group utilized this teacher solicitation more than any other group.

The question (QU)/response (PR) pattern respresented by the sum of: QU-PR, QU-QU, PR-QU, was compared between groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the question/response pattern than teachers with different amounts of training was accepted in all cases.

The elementary physical education specialists utilized the question/response pattern 1.2% of the teaching time, the general training group .8% of the time, the general physical education specialists .5% of the time, while the no training group used the question/response pattern .9% of the teaching time. The elementary physical education specialist group utilized this teacher solicitation more than any other group.

The command directive/response cycle was the only teacher soliciting/response pattern which indicated a significant difference in the four training groups. When the no training group and the general training groups were compared no significant differences in the usage of teacher soliciting/response cycles were indicated.

The elementary physical education specialists did spend less time than the other three training groups utilizing the command directive/response cycle, but the elementary physical education specialist group spent more time utilizing the other teacher soliciting/response patterns

than the other groups.

Teacher Reacting/Response Cycles

Teacher reacting/response cycles were examined between groups. The results are reported in Table 13.

The teacher reaction of praising or confirming performance (CP)/response (PR) pattern represented by the sum of: PR-CP, CP-CP, CP-PR, was examined between groups. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the praising or confirming performance/response cycle than teachers with different amounts of training was rejected in four out of six cases at the .001 level of significance. The comparison between the general physical education specialist group and the no training group and the comparison between the elementary physical education group and the general training group accepted the null hypothesis.

The general training group utilized the praising or confirming performance/response cycle 1.9% of the teaching time, the no training group .5% of the time, the general physical education specialists 0% of the time, while the elementary physical education specialists utilized this cycle 1.9% of the teaching time.

The teacher reaction of correcting or rejecting performance (RP)/response (PR) pattern represented by the sum of: RP-PR, RP-RP, PR-RP, was examined between groups. The null hypothesis that teachers with similiar training do

TABLE 13

COMPARISONS OF

TEACHER REACTING/RESPONSE CYCLES

BETWEEN GROUPS

(degrees of freedom = 1)

	Confirming Performance /Response Cycle		Correcting Performance /Response Cycle		Correcting Behavior /Response Cycle		Teacher Coaching /Response Cycle	
Group	X^2	Prob*	X^2	Prob.	X^2	Prob.	X^2	Prob.
GEN/NT	15.74	.001	3.60	NS	.17	NS	4.11	NS
PES/GEN	21.36	.001	1.20	NS	7.28	.01	.69	NS
PES/NT	4.31	NS	.26	NS	7.63	.01	4.98	NS
ELS/NT	14.29	.001	15.15	.001	6.11	NS	74.72	.001
ELS/PES	21.02	.001	8.09	.01	1.16	NS	27.09	.001
ELS/GEN	.006	NS	11.15	.001	6.45	NS	89.83	.001

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

*Prob: Probability

not exhibit significantly different amounts of the correcting or rejecting performance/response cycle than teachers with different amounts of training was rejected in one case at the .01 level and in two cases at the .001 level of significance. The null hypothesis was accepted in three cases.

The general training group utilized the correcting or rejecting performance/response cycle .9% of the teaching time, the no training group .4% of the time, the general physical education specialists .6% of the time, and the elementary physical education specialists 1.8% of the teaching time.

The analysis of the teacher reaction of praising or confirming behavior (CB)/response (PR) pattern represented by the sum of: PR-CB, CB-CB, CB-PR, was ascertained as not being significant in any comparison because this cycle was never utilized by any of the groups.

The correcting or rejecting behavior (RB)/response (PR) cycle represented by the sum of: PR-RB, RB-RB, RB-PR, was analyzed. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the correcting or rejecting behavior/response cycle than teachers with different amounts of training was rejected in two cases at the .01 level of significance. In four cases the null hypothesis was accepted.

The general training group utilized the teacher reaction of correcting or rejecting behavior 2% of the

teaching time, the no training group 2.2% of the time, the general physical education specialists .8% of the time, while the elementary physical education specialists utilized this cycle 1.2% of the teaching time.

The teacher coaching (EX,FO)/response (PR) cycle was then examined between groups. This cycle is represented by the sum of: PR-EX, PR-FO, EX-PR, FO-PR, EX-EX, FO-FO, EX-FO, FO-EX. The null hypothesis that teachers with similiar training do not exhibit significantly different amounts of the coaching/response pattern than teachers with different amounts of training was rejected in three cases at the .001 level and accepted in three cases.

The general training group utilized the coaching/response pattern 11.5% of the teaching time, the no training group 9.7% of the time, the general physical education specialists 12.4% of the time, while the elementary physical education specialists utilized this pattern 19.5% of the time.

The elementary physical education specialist group utilized confirming performance, correcting performance and coaching patterns more frequently than any other group. The general training group utilized these three patterns of teaching with the second greatest frequency.

Each of the between group comparisons indicated a significant difference in at least one teacher reacting/response cycle.

A summary of the percentage of use of various patterns of teaching behavior by various training groups is presented in Table 14.

F. Comparisons of Group Matrices

A matrix was constructed for each of the four groups and teaching behavior was compared utilizing a Darwin chi-square. The results are reported in Table 15. The null hypothesis that teachers with similiar training do not exhibit significantly different teaching behaviors than teachers with different amounts of training was accepted in five out of six cases. At the .001 level of significance, the elementary physical education specialist group and the general training group differed significantly in their teaching behavior resulting in the rejection of the null hypothesis.

G. Results of the Teacher Training Determination Form

Of the ten teachers observed, in only one case were all three observers incorrect in determining a teacher's training. In this case the observers mistook a teacher with no training as a teacher with general training in physical education. The reasons for this choice were that every child in the class had a piece of equipment and all children were always active. This teacher also utilized some open-ended skills.

In one case, only one observer was correct in

TABLE 14

SUMMARY OF PERCENTAGE USE OF

VARIOUS PATTERNS OF TEACHING BY GROUP

Teaching Pattern	Elementary P.E. Specialist	General P.E. Specialist	No Training	General Training
Command/ Response Cycle	36.4%	50.9%	40.8%	40%
Limiting Response Cycle	.3%	0%	.1%	.2%
Open/ Response Cycle	.2%	0%	.1%	0%
Question/ Response Cycle	1.2%	.5%	.9%	.8%
Confirming Performance /Response Cycle	1.9%	0%	.5%	1.9%
Correcting Performance /Response Cycle	1.8%	.6%	.4%	.9%
Correcting Behavior /Response Cycle	1.2%	.8%	2.2%	2.0%
Coaching /Response Cycle	19.5%	12.4%	9.7%	11.5%

TABLE 15

DARWIN CHI-SQUARE COMPARISONS

BETWEEN GROUPS

(degrees of freedom = 210)

Group	Darwin chi-square	Converted Z-score	Prob*
GEN/NT	137.56	-3.8827	NS
PES/GEN	180.04	1.4931	NS
PES/NT	125.55	-4.6233	NS
ELS/NT	191.63	-.8925	NS
ELS/PES	189.84	-.9841	NS
ELS/GEN	286.94	3.4863	.001

GEN: general training group
NT: no training group
PES: general physical education specialist
ELS: elementary physical education specialist

*Prob: Probability

determining a teacher's training. The other two observers determined that this teacher had no training when she was a member of the general training group. The reasons for this choice by the incorrect observers were: the lack of pupil activity, a small percentage of students with equipment, the large number of students watching other students, the skills taught and the fact that this teacher carried a copy of the lesson plan with them.

In three cases two out of three observers were correct in their determinations. As in the previous cases the reasons for these determinations were: the amount of student activity, class organization, and lesson content.

In five cases, 50% of the time, all three observers were correct in their determinations. The use of small groups, every child active and indirect teaching methods indicated an elementary physical education specialist. The observers determined that: the use of more direct skills and traditional teaching methods indicated a general physical education specialist. Children watching other children, the playing of traditional games, and lines of children waiting to have a turn indicated to the observers a teacher with no training. Teachers who seemed to have a grasp of the lesson content but were not as sure in class organization and presentation of material were classified by the observers as being members of the general training group.

During ten observation sessions, the three observers were correct in their determinations 73% of the time. The

most frequently recorded reasons for these determinations were: lesson content, presentation, class organization, and student activity.

H. Summary

All of the sample groups and paired teachers within groups indicated a significant difference in category usage. The categories which contributed the most to this significance between groups and within groups were: physical education structuring, pupil response and focussing. Demonstration also contributed to the significant difference in the within group comparisons. The command directive/response cycle was the only teacher soliciting/response pattern which indicated any significant differences between groups or within groups. All of the teacher reacting/response cycles indicated a significant difference in at least one comparison between groups and within groups. One comparison in between group matrices indicated a significant difference between the elementary physical education specialist group and the general training group.

Observers were correct in their determinations of the amount of training a teacher received specifically in physical education 73% of the time.

V. CRITIQUE AND IMPLICATIONS ARISING FROM THE USE OF A MODIFIED ROBBINS' (1973) INSTRUMENT

This chapter provides a description of the refinements introduced into Robbins' (1973) instrument and the implications arising from them. A critique of the categories used in this study is also presented.

A. Refinements to Robbins' (1973) Instrument

Robbins' (1973) instrument provided valuable data concerning teacher behavior but was found to require some refinements for use in this study.

The altering of number coded to letter coded categories facilitated the learning of the categories.

A detailed training manual should accompany Robbins' (1973) instrument if there is to be any consistency in results. At present the categories are open to individual interpretation and may be interpreted differently in various studies. The manual should provide transcribed lessons and video-taped classes with coded answer sheets with explanations as to the given categorization of the teacher behaviors. At present two transcripts but no answer sheets are provided so that the appropriate coding is left up to the discretion of the researcher. A detailed manual would thus ensure consistency in category interpretation.

A five second time interval for observations was introduced to Robbins' (1973) instrument. This interval was

found to be manageable but more experienced observers may wish to utilize a three second time interval in order to capture a more complete and accurate picture of teacher behavior. The timed interval observations allowed the matrices to be compared statistically because each tally represented a uniform time unit. In previous studies utilizing Robbins' (1973) instrument reference could only be made to such things as proportions of recorded tallies. The statistical analysis used in this study was found to provide valuable information.

A different time signal was superimposed on the signal tape every twenty observations to aid in computing observer agreement, thus if inter-observer synchronization was lost, the error was relatively simple to remedy. Ths method was found to be very effective.

B. A Critique of the Categories in the Modified Robbins' (1973) Instrument

The categories of Robbins' (1973) instrument were found to be appropriate for Division II games classes. No behavior occurred in any of the observed lessons that could not be coded utilizing this instrument.

In this study Robbins' (1973) categories were redefined to the mutual satisfaction of the three observers however an indepth training manual could eliminate this practice. The categories were redefined because the observers could not agree on the use of the categories in Robbins' instrument.

The redefining served to clarify rather that change the categories.

Teacher Structuring Categories

Physical education structuring represented by PE involved the teacher talking about the lesson. This category was usually followed by a teacher solicitation. This category was often confused with teacher focussing, teacher extending and to a lesser degree the other teacher reacting categories. This occurred, in many cases, when the teacher reaction manifested itself in the form of lecturing type behavior. The behavior was then coded as physical education structuring, but in actual fact it may have been a teacher reaction such as extending performance.

In future studies utilizing Robbins' (1973) instrument the teacher reaction categories could be subscripted into interjecting type reactions and lecturing type reactions. This subscripting would take the emphasis off the physical education structuring category and would alleviate the problem of recording teacher reactions as physical education structuring.

Non-physical education structuring represented by NP involved the teacher talking about things not related to the lesson. This category, at times, may misrepresent a teacher's "normal" teaching behavior. In one instance in this study a class was interrupted for several long periods of time by announcements over an intercom. According to

Robbins (1973) this should be recorded as non-physical education structuring. By definition he is correct, but in this case it was deleted from the sample since it was felt that recording it would misrepresent the teacher's normal teaching behavior.

In future studies a decision must be made whether or not to record interruptions by an outside source. This decision would depend on the interests and theoretical position of the researcher.

Teacher Solicitation Categories

The command directive category represented by CO involved the teacher giving a solicitation which had only one possible response. This category also included any command directive which had anything to do with class structure or management. In this study the command directive category was the most frequently utilized solicitation by any teacher. Due to its emphasis this category should be subscripted into: (1) command directives utilized to present lesson material, and (2) class management or structure command directives. Subscripting this category would alleviate the emphasis on command directives to present lesson material.

The limiting directive category represented by LI was defined to include directives which had more than one possible response where the teacher specified two aspects of the activity. Originally Robbins (1973) defined this

category as being when the student controlled two aspects of the activity. Robbins based this definition on the framework of movement analysis which has four aspects of movement. The observers in this study had problems recognizing this category and frequently confused it with the open directive category because the movement aspects can be broken down further into seventeen elements. It was easier to recognize how much control the teacher had, than how much choice the pupil was given.

The open directive category represented by OP was defined to include directives which have more than one possible response where the teacher specified one aspect of the activity. This category was redefined by employing the same reasoning described in the preceding paragraph when redefining the limiting directive category.

Teacher questioning category represented by QU was defined as any teacher question. Problems arose with this category when teachers used such interjections as: "OK?", "See?", "Eh?", etc, which were not intended to be questions which expect a student response. When utilizing a timed interval for recording categories, the observer had only one second to make a decision as to which category to record. Many times the "meaning" of the statement was not immediately recognized, and by the time it was, the next time signal had occurred.

In teacher questioning only questions which require a student response should be recorded as such. The time signal

does not allow for a great deal of time to make a decision and many times the interaction may be misinterpreted. It was felt that the time interval which allows for the statistical comparison of the interaction matrices is valuable and the error in meaning could be minimized with more experienced coders.

Pupil Response Category

The pupil response category represented by PE was defined as anything verbal or physical that the students did. This category only occurred when a codable teacher activity did not coincide with it because the main focus of this study was teacher behavior. For the same reason Robbins' (1973) three original pupil response categories were collapsed into one category of pupil response.

Future researchers may wish to utilize the original categories depending on the their research interests.

Teacher Reacting Categories

All of the teacher reacting categories could be subscripted into interjecting reactions and lecturing reactions as suggested in the section on physical education structuring. Subscripting the reaction categories would give a more accurate and complete picture of the physical education setting.

The confirming performance category represented by CP involves teacher reactions which praise, encourage,

reinforce, or confirm a student's performance. None of the observers had any problems with this category.

Confirming behavior represented by CB was defined as a teacher reaction to a student's manners, deportment or the way they treated others. This category never occurred in any of the observed lessons in this study. Both Pickard (1974) and Robbins (1973) also found this to be the case. Robbins considered the inclusion of this category necessary from a theoretical standpoint.

The rejecting or correcting performance category represented by RP was defined as correcting the activity the student was engaged in. In this behavior the teacher does not suggest ways to rectify the problem, this would be categorized as either extending or focussing. When utilizing a time signal a reaction like: "No. That's not right, try jumping higher." may be categorized as rejecting performance if the time signal occurred during the underlined part of the sentence when it is actually teacher focussing. These errors did not occur frequently enough to dispense with the time signal. It must be remembered that when utilizing a time signal the researcher is "sampling" the behaviors which occurred.

The rejecting or correcting behavior category represented by RB involved the teacher correcting the student's manners, deportment, or the way they treated others. As with rejecting performance this behavior cannot suggest ways to rectify the student's behavior.

The extending reaction category represented by EX was defined as the teacher adding something to the student's response, which is new to the activity. This category was occasionally confused with teacher focussing in the early stages of observer training but with experience this error occurred less frequently.

The focussing reaction category represented by FO was defined as the teacher directing attention to one aspect of the student's activity; the activity does not change. Except for the occassional confusion of this category with the extending category the observers had no other problems with it.

The demonstration category represented by DE was defined as when a teacher or pupil(s) performed for the rest of the class. In future studies this category should be subscripted into pupil(s) demonstration and teacher demonstration because pupil(s) demonstration does not belong in the <u>teacher</u> reaction section.

The teacher not only performs for the rest of the class, she may demonstrate for one student or for a groups of students. In future studies this should be included in the definition.

<u>Other Categories</u>

The silence or confusion category represented by SC was recorded when no other codable activity was being performed. In this study utilizing a timed interval, when

the students did not respond to a teacher solicitation in ten seconds it was recorded as silence or confusion. The observers had no problems with this category.

C. Summary

This chapter has provided a critique and implications arising from the use of a modified Robbins' (1973) instrument. The refinements introduced to Robbins' instrument and the categories utilized were discussed.

VI. SUMMARY, CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The major purpose of this study was to examine teacher behavior in Division II games classes to ascertain whether there was any relationship between teacher behavior and the amount of teacher training in physical education an individual had received.

This chapter presents the findings and results arising from the study and suggestions for further research.

A. Findings and Conclusions

Research question one asked if teachers with similiar training exhibited common teaching behaviors.

When category usage was compared within groups, all pairs of teachers differed significantly at the .001 level of significance. This indicated that each teacher utilized the categories in a unique way.

When eight patterns of teaching were compared within groups an average of 2.4 patterns in the general training group, one pattern in the no training group and three patterns in the elementary physical education specialist group indicated a significant difference. Comparing patterns of teaching indicated that teachers with similiar training do exhibit common teaching behaviors.

One pair of teachers in the general training group, when compared utilizing a Darwin chi-square, indicated a

significant difference in their teaching behavior. The average Darwin chi-square for all within group comparisons within the general training group was .57947 which is not significant. This indicated that teachers with general training in physical education do exhibit common teaching behaviors.

Darwin chi-square comparisons within groups for the no training group and the elementary physical education specialist group also indicated no significant differences. This supported the conclusion that teachers with similiar training do exhibit common teaching behaviors.

In general, teachers with similiar training appeared to exhibit common teaching behaviors because their patterns of teaching and teaching matrices were similiar, although their category usage was unique to each individual.

Research question two asked if teachers with similiar training exhibited different teaching behaviors than teachers with different amounts of training.

When category usage was compared between groups, all comparisons were significantly different at the .001 level of significance. Each group of teachers utilized the categories with a significantly different frequency.

When the eight patterns of teaching were compared between groups, the elementary physical education specialist group and the no training group or the general physical education specialist group differed significantly in four teaching patterns. The general training group when compared

with either the no training group or the elementary physical education specialist group indicated three significantly different patterns of teaching. When the general physical education specialist group and the no training group were compared, two patterns of teaching were significantly different.

The elementary physical education specialist group appeared to be the most unique of the four differently trained groups. The elementary physical education specialist group spent less time than the other three training groups utilizing the command directive/response cycle and more time utilizing the other three teacher soliciting/response cycles, the confirming performance/response cycle, the correcting performance/response cycle and the teacher coaching/response cycle. The general physical education specialist group and the no training group appeared to be the most similiar when comparing patterns of teaching because they differed in only two out of eight patterns of teaching.

When the elementary physical education specialist group and the general training group matrices were compared utilizing a Darwin chi-square, they differed significantly at the .001 level of significance. No other significant differences in teacher behavior were indicated in any of the between group analyses.

The no training group matrix, when compared with either the general physical education specialist group or the

general training group matrices, appeared to exhibit the most similiar teaching behaviors because their Darwin chi-squares were the lowest. When the general physical education specialist group and the general training group martrices were compared there appeared to be a greater difference in their teaching behaviors because their Darwin chi-squares were higher. A trend emerged where the elementary physical education specialist group appeared to exhibit different teaching behaviors than the other three training groups because their Darwin chi-squares were higher than the rest.

In general, teachers with similiar training did not appear to exhibit significantly different teaching behaviors than teachers with different amounts a training. A trend did emerge where the elementary physical education specialist group appeared to teach in a more unique way than the other three training groups.

It is difficult to conclude at this point whether teachers with similiar training teach in a similiar way or if teachers with similiar training exhibit different teaching behaviors than teachers with different amounts of training. The number of teachers in each of the training groups would have to be increased before any significant conclusions could be reached regarding these questions.

However in this study, teachers with similiar training appeared to exhibit common teaching behaviors. During this study the elementary physical education specialist group

appeared to exhibit more unique teaching behaviors than the other three training groups.

Pickard's (1974) conclusion that individual teachers taught in unique ways appeared to be contrary to those of this study. Pickard utilized frequencies of behavioral categories to compare teacher behavior. When category usage was compared in this study the same conclusion was reached. However, when patterns of teaching, or teacher matrices were compared, similiarities within groups and differences between groups became apparent. The statistical comparison of teaching patterns and teacher matrices within groups and between groups appeared to provide a more indepth analysis of teacher behavior.

The teacher training determination form completed by the three observers supported these tentative conclusions. The high percentage of correct determinations indicated that teachers with similiar training exhibited similiar teaching behaviors. The results of this form also indicated that teachers with different amounts of training may exhibit different teaching behaviors.

The results of the teacher training determination form indicated that training in physical education may have a greater impact on lesson content, class organization, presentation of material and student activity than on teacher behavior as analyzed by Robbins' (1973) instrument.

B. Suggestions for Further Research

More testing is needed analyzing teacher behavior and teacher training in Division II games classes utilizing Robbins' (1973) instrument. The numbers in the groups need to be increased to make the samples more representative of the various training groups. The modifications to Robbins' instrument and procedures, as suggested earlier, if implemented in future studies would facilitate the learning of the categories and would allow the data to be analyzed statistically.

For future use a detailed manual should be designed including a more detailed description of the categories, lesson transcripts and video-taped classes with coded answer sheets with explanations for the categories used.

Robbins' (1973) instrument should also be utilized to analyze teacher behavior and teacher training in other areas of the physical education curriculum and at other grade levels. These studies would ascertain if the results of this study would be similiar for other grade levels and areas of the physical education curriculum.

It would be of value to set up a parallel study to one utilizing Robbins' (1973) instrument analyzing teacher behavior and teacher training in physical eduction, to analyze the impact various amounts of teacher training in physical education has on lesson content, presentation of material, class organization and student activity.

C. Summary

This chapter has presented the findings and conclusions arising from the use of a modified version of Robbins' (1973) instrument to analyze the possible relationship between teacher training in physical education and teacher behavior in Division II games classes. The tentative conclusions were that teachers with similiar training appeared to exhibit similiar teaching behaviors and that the elementary physical education specialist group appeared to exhibit more unique teaching behaviors than the other three training groups. The conclusions suggest that teacher training in physical education does have an impact on teacher behavior in Division II games classes.

This chapter also included suggestions for further research.

REFERENCES

Anderson, H. J. An Exploratory Study using the Observation System for the Analysis of Primary Reading Lessons at the Fourth Grade Level. Unpublished masters thesis, University of Alberta, 1978.

Anderson, R. A Comparison of the Bales' and Flanders' Systems of Interaction Analysis as Research Tools in Small Group Instruction. Unpublished doctoral dissertation, University of Alberta, 1972.

Anderson, W. G. Videotape Data Bank. Journal of Physical Education and Recreation, September 1975, 46(7), 31-34.

Anderson, W. G. Descriptive-Analytic Research on Teaching. Quest, 1971, 15, 1-8.

Barrett, K. R. A Procedure for Systematically Describing Teacher-Student Behavior in Primary Physical Education Lessons Implementing the Concepts of Movement Education. Unpublished doctoral dissertation, University of Wisconsin, 1969.

Bell, J. B. A Survey of Elementary School Physical Education in the Edmonton Public Schools. Unpublished masters thesis, University of Alberta, 1974.

Bellack, A. Bellack System in Mirrors for Behavior II: An Anthology of Observation Instruments. A. Simon & E. G. Boyer, editors. Philadelphia: Classroom Interaction Newsletter, 1970, 4-1 - 4-6.

Bellack, A. A., Kliebard, H. M., Hyman, R. T. & Smith, F. L., Jr. The Language of the Classroom. New York: Teachers College Press, 1966.

Bennett, W. Teaching Styles and Pupil Progress. London: Open Books Publishing Ltd., 1976.

Bilbrough, A. & Jones, P. Physical Education in the Primary School. London: University of London Press Ltd., 1963.

Bookhout, E. D. Teaching Behavior in Relation to Social-Emotional Climate of Physical Education Classes. Research Quarterly, October 1967, 38(3), 336-347.

Browne, M. P. An Exploratory Study of Teacher-Pupil Interaction in Primary Reading Groups. Unpublished doctoral dissertation, University of Alberta, 1971.

Cheffers, J. T., Amidon, E. J. & Rogers, K. D. Interaction Analysis: An Application to Nonverbal Activity. Minneapolis: Association for Productive Thinking, 1974.

Darwin, J. H. Note of the Comparison of Several Realizations of a Markov Chain. Biometrika, 1959, 46, 412-419.

Davis, E. C. & Wallis, E. L. Towards Better Teaching in Physical Education. Englewood Cliffs: Prentice-Hall, Inc. , 1961.

Dougherty, N. J., IV. A Plan for the Analysis of Teacher-Pupil Interaction in Physical Education Classes. Quest, 1971, 15, 39-49.

English, H. & English, A. A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. New York: Longmans, 1958.

Fishman, S. E. A Procedure for Recording Augmented Feedback in Physical Education Classes (Doctoral dissertation, Columbia University, 1974). Dissertation Abstracts International, 1974-1975, 35(9), 5986A. (University Microfilms No. 75-6463,371)

Fishman, S. E. & Anderson, W. G. Developing a System for Describing Teaching. Quest, 1971, 15, 9-16.

Flanders, N. Analyzing Teaching Behavior. Massachusetts: Addison-Wesley Publishing Co., 1970.

Flanders, N. Interaction Analysis in the Classroom. Michigan: School of Education, University of Michigan, 1966.

Frick, T. & Semmel, M. I. Observer Agreement and Reliabilities of Classroom Observation Measures. Review of Educational Research, Winter 1978, 48(1), 157-184.

Goldberger, M. Studying Your Teaching Behavior. Journal of Health, Physical Education, and Recreation, March 1974, 45(3), 33-36.

Hurwitz, R. F. A System to Describe Certain Aspects of the Physical Education Teacher's Role in the Learning-Activity Selection Process (Doctoral dissertation, Columbia University, 1974). Dissertation Abstracts International, 1974-1975, 35(9), 5904A. (University Microfilms No. 75-6469,219)

Kirchner, G., Cunningham, J. & Warrell, E. Introduction to Movement Education. Iowa: Wm C. Brown Pub., 1970.

Kirchner, G. Physical Education for Elementary School Children. Iowa: Wm C. Brown Company Pub., 1966.

Laubach, S. A. The Development of a System for Coding Student Behavior in Physical Education Classes (Doctoral dissertation, Columbia University, 1975). Dissertation Abstracts International, 1975-1976, 36(3), 1371A-1372A. (University Microfilms No. 75-18,689,179)

Logsdon, B., Barrett, K., Ammons, M., Broer, M., Halverson, L., McGee, R., & Robertson, M. Physical Education for Children, A Focus on the Teaching Process. Philadelphia: Lea & Febiger, 1977.

Lydon, M. C. Decision-Making in Elementary School-Aged Children: Effects of a Convergent Curriculum Model Upon Motor Skill Development, Self-Concept, and Group Interaction (Doctoral dissertation, Boston University, 1978). Dissertation Abstracts International, 1977-1978, 38, 7211A-7212A. (University Microfilms No. 7808064)

Marteniuk, R. G. Information Processing in Motor Skills. New York: Holt, Rinehart & Winston, 1976.

Martinek, T. J., Zaichkowsky, L. D. & Cheffers, J. T. Decision-Making in Elementary Age Children: Effects on Motor Skills and Self-Concept. Research Quarterly, May 1977, 48(2), 349-357.

McCarty, D. J. & Associates. New Perspectives on Teacher Education. San Francisco: Jossey-Bass Pub., 1973.

Mitchell, J. V. Education's Challenge to Psychology: The Prediction of Behavior from Person-Environment Interactions. Review of Educational Research, 1969, 39, 659-721.

Mosston, M. Teaching: From Command to Discovery. California: Wadsworth Publishing Co. Ltd., 1972.

Mosston, M. Teaching Physical Education. Ohio: Charles E. Merrill Publishing Co., 1966.

Nygaard, G. Interaction Analysis of Physical Education Classes. Research Quarterly, October 1975, 46(3), 351-357.

Padfield, C. Teachers' Attitudes Towards Creative Dance: A Survey Through Questionnaire and Personal Interview. Unpublished masters thesis, University of Alberta, 1973.

Pickard, G. Interaction Analysis: A Need for "Descriptive Analytic Research in Physical Education", Project I. Unpublished paper, Department of Health & Physical Education, University of Regina, 1979.

Pickard, G. Teaching Behavior of Grade Five Gymnastic Teachers. Unpublished masters thesis, University of Alberta, 1974.

Robbins, S. The Development of an Instrument to Analyze Teacher Behavior in Elementary School Physical Education. Unpublished doctoral dissertation, University of Alberta, 1973.

Schurr, E. Movement Experiences for Children: Curriculum and Methods for Elementary School Physical Education. New York: Meredith Publishing Co., 1967.

Scott, W. A. Reliability of Content Analysis: The Case of Nominal Scale Coding. Public Opinion Quarterly, 1955, 19(3), 321-325.

Siedentop, D. Developing Teaching Skills in Physical Education. Boston: Houghton Mifflin Co., 1976.

Siedentop, D. Behavior Analysis and Teacher Training. Quest, May 1972, 18, 26-32.

Tobey, C. A Descriptive Analytic Analysis of the Occurrences of Augmented Feedback in Physical Education Classes (Doctoral Dissertation, Columbia University, 1974). Dissertation Abstracts International, 1974-1975, 35, 3497A. (University Microfilms No. 74-26,623,223)

Wesson, P. A Preliminary Investigation into the Effects of Teacher Behavior in Elementary School Physical Education on the Self-Concept of Pupils. Unpublished masters thesis, Univeristy of Alberta, 1973.

Yake, F. I. Using the Observational System for the Analysis of Primary Reading Lessons in Grade One Language Experience Reading Classes. Unpublished masters thesis, Univeristy of Alberta, 1973.

APPENDIX A

LETTER TO TEACHERS

Jan. 15, 1980

Dear :

This letter confirms the dates and times to observe your physical education classes. The dates and times are as follows:

a. DATE: TIME:

b. DATE: TIME:

c. DATE: TIME:

If these dates are not suitable please contact me at home: 434-3880; at work: 432-3919; or leave a message at: 432-3652.

In your observation sessions, please teach a segment of your games program. Skill acquisition and development should be a part of every games lesson.

Thank you for your cooperation with regard to the research I am conducting.

Yours truly,

Catherine E. Campbell

APPENDIX B

TEACHER QUESTIONNAIRE

TEACHER QUESTIONNAIRE

NAME:

SCHOOL:

GRADE TAUGHT DURING OBSERVATION SESSIONS:

NUMBER IN CLASS:

1. How many university courses (three credit hours) have you received credit for in elementary school physical education (courses specific to ages 5 to 12)?
2. How may university courses (three credit hours) have you received credit for in general physical education (or courses specific to ages 13 and up)?
3. When was your last course in physical education?
4. What degree(s) do you have? Please include your major and minor.
5. Are you a member of any professional physical education organizations? If yes, how many?
6. Have you attended any physical education inservices in the last five years? If yes, how many?
7. Have you attended any physical education conferences in the last five years? If yes, how many?
8. How many times has a physical education consultant visited you in the last five years? When was the most recent visit?
9. How may years experience do you have in teaching elementary physical education (include this year)?

10. Would you choose to teach physical education if you did not have to?
11. What reference materials do you use when preparing you physical education lessons?
    a. None
    b. Local Guide
    c. Alberta guide
    d. other guides
    e. other references (books)
12. Which statement best describes your feelings about teaching physical education? Circle one.
    a. I love teaching physical education.
    b. I like teaching physical education.
    c. I am indifferent towards teaching physical education.
    d. I dislike teaching physical education.
    e. I hate teaching physical education.

Thank you for your cooperation in filling out this questionnaire. All your responses will be held in the strictest confidence.

Yours truly

Catherine E. Campbell

APPENDIX C

DESCRIPTION OF ROBBINS' (1973) CATEGORIES

DESCRIPTION OF ROBBINS' (1973) CATEGORIES

The description of the seventeen categories is a summary of Appendix F (Robbins, 1973, p. 157-176) in Robbins' thesis.

Structuring - This section involves introducing, organizing, planning, explaining, describing, and summarizing. Structuring is used to give information, facts, ideas, or orientation to the students.

1. Physical Education Centred Teacher Lecturing Behavior - This category is behavior which is directly related to the Physical Education lesson but does not solicit a response from pupils, nor, is it a reaction to pupils' responses.

Examples:

1) "Today we will be working on different body shapes."
2) "We are going to divide into small groups to work on the apparatus."

2. Non-physical Education Centred Lecturing Behavior - Any teacher behavior which does not relate to the physical education lesson.

Examples:

1) "There will be no volleyball practice this afternoon."
2) "As I call your name, answer yes."

Teacher Soliciting Behavior - This section involves teacher

behaviors which are intended to elicit a response from the pupil(s). The behavior must be an independent or a new task. The control a teacher exercises will determine which category the teacher behavior falls into.

3. Command, Authoritarian, Directive - Any teacher behavior which completely controls the students' response.

Examples:

1) "Sit down."

2) "Bounce the ball three times."

4. Limiting or Restricting Directive - Any teacher behavior which limits the students' response but leaves up to two aspects of the activity uncontrolled and more than one response is possible.

Examples:

1) "Balance on two body parts."

2) "Move the ball with your feet."

5. Open or Free Directive - Any teacher behavior which leaves more than three aspects of the activity uncontrolled and many responses are possible.

Examples:

1) "Move anywhere in the gym."

2) "Show me a balance."

6. Teacher Questionning - Any teacher behavior which questions the students about the content or procedure of the activity. Students respond with either a verbal or physical response.

Examples:

1) "Can you show me four ways to move along the bench?"

2) "Are you steadier with your feet together or with your feet apart."

Pupil Response - This section covers any response by the students.

7. Pupils' Verbal Response - Any pupil response which is verbal, or a physical substitute for a verbal answer.

Examples:

1) Question: "Which shape is steadier?"
   Answer: "A wide shape."

2) Question: "Why?"
   Answer: "The base is bigger."

8. Pupil Activity Response - Any pupil response which is a physical activity.

Examples:

1) Directive: "Sit down."
   Response: Children sit down.

2) Directive: "Show me a balance."
   Response: Children perform a balance.

9. Pupil Initiating Action - The pupil, of his own volition, initiates interaction with the teacher.

Examples:

1) The students are jumping, one pupil asks: "How can I turn in the air?"

2) Students are moving over objects, one child

moves under an object, and the teacher accepts this behavior.

Teacher Reacting Behavior - This section covers any teacher behavior which is a reaction to pupil responses.

10. Teacher Confirming Performance Reactions - The teacher reacts to the pupils' activity.

Examples:

1) Response: A pupil performing a sequence.
   Reaction: "Good Mary, I liked that."
2) Response: A pupil is batting a ball.
   Reaction: "Well done, you hit it."

11. Teacher Confirming Behavior Reactions - The teacher reacts to the pupils' general deportment, propiety, manners, or the way they treat others.

Examples

1) Response: A child sits quietly.
   Reaction: "Mary, you are sitting so quietly."
2) Response: A child follows directions.
   Reaction: "You are behaving well."

12. Teacher Correcting Performance Reactions - The teacher corrects activity response.

Examples:

1) "No that is not right."
2) "Class do not stomp."

13. Teacher Correcting Behavior Reactions - The teacher corrects the pupils' general deportment, propriety, manners,

or the way they treat others.

Examples:

1) "Mary stop pushing."

2) "Class you are too noisy."

14. Teacher Extending Reactions - The teacher attempts to add, vary or extend the responses of the pupils.

Examples:

1) "Try changing directions while you are running."

2) "Sometimes move fast, sometimes slow."

15. Teacher Focussing Reactions - The teacher focusses the pupils' attention on one aspect of the activity.

Examples:

1) "Bend your knees when you land."

2) "Point your toes."

16. Demonstration - This category includes any demonstration performed by the teacher, student, or groups of students.

Examples:

1) The teacher performs a forward roll.

2) A student shows his sequence.

17. Silence or Confusion - This area includes unproductive activity or silence of a duration longer than three seconds.

Examples:

1) Students sit doing nothing.

2) Children are running about uncontrollably.

APPENDIX D

REDEFINITION OF ROBBINS' (1973) CATEGORIES

REDEFINITION OF ROBBINS' (1973) CATEGORIES

PE Physical Education Structuring - talking about the lesson.

Examples:

1) "Now we are going to divide into groups."

2) "Follow-through is important."

These MAY and probably WILL be followed by a solicitation.

NP Non-Physical Education Structuring - talking about something not related to the lesson.

Examples:

1) "There will be no brownies today."

2) "Go to the classroom and open your notebooks."

TEACHER SOLICITING: a) expect a student response, and b) must be a new task. To be a new task, the activity MUST change; something added or subtracted is not a new activity.

Examples:

The class is jumping and are now running; "running" is a new activity. BUT, if running was added, ie: run and jump, then it was extending (a reaction).

If a piece of equipment is added to the activity, it is extension (reaction), BUT, if the activity also changes, then it is a new task.

If activities are combined, ie: working on running, then jumping, then balancing, each was a new activity and so is the combination. BUT, if the sequence was the primary

activity, then the adding of new tasks is "extending".

CO Command Directive - complete control, only one response is possible.

Examples:

1) "go", "stop", "whistle", "clap", etc.
2) "Show me a headstand."
3) "Run to the other side."

Anything to do with class structure or management, ie: setting up, grouping, get a partner, is to be categorized as a command.

LI Limiting Directive - More then one response is possible. If the teacher specifies two aspects of the activity, it is limiting.

Examples:

1) "Hit the ball with your racket towards the target."
2) "Run and change directions."

OP Open Directive - More than one response is possible. The teacher specifies one aspect of the activity.

Examples:

1) "Show me a balance."
2) "Move the ball."

QU Teacher Questionning - the teacher asks a question - anything with a "?".

PR Pupil Response - anything that the children do, verbal or

physical. A codable teacher activity takes precedence over a codable pupil activity.

TEACHER REACTING - is NOT a new task, BUT, it may be a directive. The teacher does this in reaction to a student response. Reactions may be directed to an individual or to a group.

CP Confirming Performance - praises, encourages, reinforces or confirms.

Examples:

1) "Good."
2) "You hit the target."

CB Confirming Behavior - to do with manners, deportment, etc.

Examples:

1) "You listened well."
2) "Thank you for being quiet."

RP Rejecting (correcting) Performance - Correcting the activity a child is engaged in.

Examples:

1) "You can do better than that."
2) "No. That's not right."

RB Rejecting (correcting) Behavior - correcting the behavior of a student.

Examples:

1) "Pay attention."

2) "Don't hit John."

NOTE: If ANY of the performance or behavior categories are in the form of focussing attention on an aspect of the activity or involve extending performance or behavior they are categorized under focussing and extending, NOT, confirming and rejecting. Therefore, if the teacher suggests ways to rectify the problem, or to improve performance or behavior it is extending or focussing.

Examples:

a. "No Mary. Stretch".....is focussing.

b. "Good. Now try turning as you jump."..... is extending.

c. "Yes. That is right."..... is confirming performance.

EX Extending Reaction - adds something to the response.

Examples:

1) "Make different shapes while jumping."

2) "Sometimes travel forwards, sometimes sideways."

FO Focussing Reaction - focusses attention on one aspect of the activity; it does not change the activity.

Examples:

1) "Try to land softly."

2) "Look at the target."

DE Demonstration - if the teacher, pupil, or group, performs for the rest of the class, it is demonstration.

SC Silence or Confusion - is recorded if no codable activity is being performed, or if the children do not respond to a directive for ten seconds.

APPENDIX E

TEACHER TRAINING DETERMINATION FORM

TEACHER TRAINING DETERMINATION FORM

TEACHER:

SCHOOL:

TRAINED:

a. YES

b. NO

IF YES:

a. Elementary Physical Education Specialist

b. General Physical Education Specialist

c. General Physical Education Training

REASON FOR CHOICE:

SIGNATURE

APPENDIX F

CORRESPONDENCE

York University
Faculty of Education
Downsview, Ontario
November 1, 1979

Dear Catherine:

Thank you for your letter with respect to your M.Ed. thesis. I will answer your questions in order.

1. Although I have not worked extensively with a time interval, I was more concerned with behaviors. I did do some experimenting with a 3 second bleep on a tape. The recorders actually recorded only at a change of behavior. Since the tape was moving at a predetermined speed decoding could be recorded every bleep (or 3 seconds). By working in this way, no behaviors are missed. You might find a longer time interval would be feasible. If seemed easier for the recorders to record changes of behavior rather than to be concerned with time as well.
2. Unfortunately, I have not found a better statistic than Scott's coefficient.
3. I have not carried out any matrices comparisons so I cannot recommend anything better than Darwin's Chi-square.

I recommend that you write to Garth Pickard School of Physical Education, University of Regina, since he has been

doing some work with the instrument.

Please give my regards to Patty and Clive. I would be interested in your findings. Please contact me if you have any further questions.

Sincerely,

Stuart G. Robbins

University of Regina
Faculty of Education
Regina, Saskatchewan
October 23, 1979

Dear Ms. Campbell:

It is interesting to hear that you are incorporating Stu Robbins' instrument in your thesis work. Presently, our department is utilizing it extensively in order to better understand our teacher training program.

Regarding your questions: the time signal was transmitted to the observer and onto the coding tape simultaneously from another tape recorder (special wiring was used). The interval signals helped the observer maintain the three second coding during "long codes" ie: series of 8's or 1's. It was disregarded when various interactions "short codes" were occurring within the three seconds.

We are still using the Scott's coefficient. It seems our training methods have not changed drastically and the results are satisfactory.

We have done little with the matrices. Basic percentage displays have been used. We are presently working with our computing services to accommodate the matrix data.

When I critiqued Stu's instrument there were problems with category 6 and 17. To date, we have not altered 6, but, have added category 18 confusion leaving category 17 as silence.

I wish you good luck. I hope this information is what you require. If any more is needed, please feel free to contact me.

Sincerely,

Garth Pickard

Educational Research
Oakland, California
October 16, 1979

Dear Ms. Campbell:

Regarding your questions, Scott is about as good a coefficient as you will find. Its primary use is in observer training. It gets higher as observation becomes more consistent when two or more observers view the same field. A Scott coefficient, or any other index of reliability is inconsequential in any argument which attempts to "establish the validity and reliability of an observation precedure", just as it is useless to argue about the reliability of a paper and pencil test. In this latter argument, let any test of significance (F, t, etc) of an inferential system take into account the error variance of the data.

Don't use the Darwin chi-square. It tends too often to reject the null hypothesis and does depend on the "N" of the matrix. Test your more important variables (whether they be cell frequencies, clusters of cell-frequencies, or column totals with ordinary ANOVA.

Good luck with your research.

Sincerely yours,

Ned A. Flanders

APPENDIX G

SCOTT COEFFICIENT "PI"

SCOTT COEFFICIENT "PI"

$$Pi = \frac{Po - Pe}{100 - Pe}$$

where:

a. Po is the percent agreement,

b. Pe is the percentage agreement expected by chance found by squaring the proportion of tallies in each category, summing over all categories and multiplying by 100.

$$Pe = 100 \sum_{i=1}^{k} Pi^2$$

where:

a. k is the number of categories,

b. Pi is the proportion of tallies falling in each category.

Scott's coefficient is the amount that two observers exceeded chance agreement divided by the amount that perfect agreement exceeds chance (Flanders, 1966, p. 13).

APPENDIX H

CALCULATION OF SCOTT'S COEFFICIENT

CALCULATION OF SCOTT'S COEFFICIENT

Teacher 01	.7887811
Teacher 02	.800042
Teacher 03	.8205803
Teacher 04	.7393038
Teacher 05	.7995183
Teacher 06	.750429
Teacher 07	.8510357
Teacher 08	.7936642
Teacher 09	.8532635
Teacher 10	.7513458

Average Scott's coefficient = .79479637

APPENDIX I

ACTUAL MATRICES USED IN THIS STUDY

TEACHER 01

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	195	2	10	0	0	3	28	0	0	0	0	1	3	4	4	250
T	18.1	0.2	0.9	0.0	0.0	0.3	2.6	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.4	23.1
C	78.0	20.0	18.9	0.0	0.0	50.0	4.5	0.0	0.0	0.0	0.0	100.0	3.5	30.8	22.2	23.1
R	78.0	0.8	4.0	0.0	0.0	1.2	11.2	0.0	0.0	0.0	0.0	0.4	1.2	1.6	1.6	100.0
NP-	2	2	0	0	0	1	4	0	0	0	1	0	0	0	0	10
T	0.2	0.2	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9
C	0.8	20.0	0.0	0.0	0.0	16.7	0.6	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.9
R	20.0	20.0	0.0	0.0	0.0	10.0	40.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	100.0
CO-	10	1	10	0	0	0	25	0	0	0	1	0	3	2	1	53
T	0.9	0.1	0.9	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.1	0.0	0.3	0.2	0.1	4.9
C	4.0	10.0	18.9	0.0	0.0	0.0	4.0	0.0	0.0	0.0	10.0	0.0	3.5	15.4	5.6	4.9
R	18.9	1.9	18.9	0.0	0.0	0.0	47.2	0.0	0.0	0.0	1.9	0.0	5.7	3.8	1.9	100.0
LI-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	1	0	1	0	0	0	3	0	0	0	0	0	0	0	1	6
T	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6
C	0.4	0.0	1.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.6
R	16.7	0.0	16.7	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	100.0
PR-	25	4	25	0	0	2	500	0	0	3	6	0	58	0	5	628
T	2.3	0.4	2.3	0.0	0.0	0.2	46.3	0.0	0.0	0.3	0.6	0.0	5.4	0.0	0.5	58.1
C	10.0	40.0	47.2	0.0	0.0	33.3	79.5	0.0	0.0	75.0	60.0	0.0	67.4	0.0	27.8	58.1
R	4.0	0.6	4.0	0.0	0.0	0.3	79.6	0.0	0.0	0.5	1.0	0.0	9.2	0.0	0.8	100.0
CP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEACHER 01 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	1	0	0	0	0	0	2	0	0	1	0	0	0	0	0	4
T	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4
C	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.4
R	25.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	100.0
RB-	4	0	1	0	0	0	2	0	0	0	1	0	2	0	0	10
T	0.4	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.9
C	1.6	0.0	1.9	0.0	0.0	0.0	0.3	0.0	0.0	0.0	10.0	0.0	2.3	0.0	0.0	0.9
R	40.0	0.0	10.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	10.0	0.0	20.0	0.0	0.0	100.0
EX-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
R	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
FO-	7	0	3	0	0	0	57	0	0	0	0	0	18	1	0	86
T	0.6	0.0	0.3	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	1.7	0.1	0.0	8.0
C	2.8	0.0	5.7	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	20.9	7.7	0.0	8.0
R	8.1	0.0	3.5	0.0	0.0	0.0	66.3	0.0	0.0	0.0	0.0	0.0	20.9	1.2	0.0	100.0
DE-	1	0	0	0	0	0	4	0	0	0	0	0	2	6	0	13
T	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	1.2
C	0.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	2.3	46.2	0.0	1.2
R	7.7	0.0	0.0	0.0	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	15.4	46.2	0.0	100.0
SC-	4	1	3	0	0	0	3	0	0	0	1	0	0	0	7	19
T	0.4	0.1	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	1.8
C	1.6	10.0	5.7	0.0	0.0	0.0	0.5	0.0	0.0	0.0	10.0	0.0	0.0	0.0	38.9	1.8
R	21.1	5.3	15.8	0.0	0.0	0.0	15.8	0.0	0.0	0.0	5.3	0.0	0.0	0.0	36.8	100.0
SUM	250	10	53	0	0	6	629	0	0	4	10	1	86	13	18	1080
T	23.1	0.9	4.9	0.0	0.0	0.6	58.2	0.0	0.0	0.4	0.9	0.1	8.0	1.2	1.7	100.0

TEACHER 02

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	178	0	6	0	0	2	47	0	0	1	11	0	9	14	6	274
T	17.6	0.0	0.6	0.0	0.0	0.2	4.6	0.0	0.0	0.1	1.1	0.0	0.9	1.4	0.6	27.0
C	65.0	0.0	13.3	0.0	0.0	18.2	9.1	0.0	0.0	25.0	27.5	0.0	13.8	51.9	35.3	27.0
R	65.0	0.0	2.2	0.0	0.0	0.7	17.2	0.0	0.0	0.4	4.0	0.0	3.3	5.1	2.2	100.0
NP-	1	1	0	0	0	0	4	0	0	0	0	0	0	0	0	6
T	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
C	0.4	16.7	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
R	16.7	16.7	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
CO-	13	0	9	0	0	2	14	0	0	0	5	1	1	0	0	45
T	1.3	0.0	0.9	0.0	0.0	0.2	1.4	0.0	0.0	0.0	0.5	0.1	0.1	0.0	0.0	4.4
C	4.7	0.0	20.0	0.0	0.0	18.2	2.7	0.0	0.0	0.0	12.5	25.0	1.5	0.0	0.0	4.4
R	28.9	0.0	20.0	0.0	0.0	4.4	31.1	0.0	0.0	0.0	11.1	2.2	2.2	0.0	0.0	100.0
LI-	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.1
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	4	0	0	0	0	1	5	0	0	0	1	0	0	0	0	11
T	0.4	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.1
C	1.5	0.0	0.0	0.0	0.0	9.1	1.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	1.1
R	36.4	0.0	0.0	0.0	0.0	9.1	45.5	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	100.0
PR-	43	4	22	1	0	5	374	3	0	3	12	3	37	2	5	514
T	4.2	0.4	2.2	0.1	0.0	0.5	36.9	0.3	0.0	0.3	1.2	0.3	3.7	0.2	0.5	50.7
C	15.7	66.7	48.9	100.0	0.0	45.5	72.6	75.0	0.0	75.0	30.0	75.0	56.9	7.4	29.4	50.7
R	8.4	0.8	4.3	0.2	0.0	1.0	72.8	0.6	0.0	0.6	2.3	0.6	7.2	0.4	1.0	100.0
CP-	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	4
T	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
C	0.0	0.0	2.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
R	0.0	0.0	25.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

TEACHER 02 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RP-	2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	4	
T	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	
C	0.7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.4	
R	50.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	100.0	
RB-	8	1	1	0	0	1	17	0	0	0	5	0	5	1	1	40	
T	0.8	0.1	0.1	0.0	0.0	0.1	1.7	0.0	0.0	0.0	0.5	0.0	0.5	0.1	0.1	3.9	
C	2.9	16.7	2.2	0.0	0.0	9.1	3.3	0.0	0.0	0.0	12.5	0.0	7.7	3.7	5.9	3.9	
R	20.0	2.5	2.5	0.0	0.0	2.5	42.5	0.0	0.0	0.0	12.5	0.0	12.5	2.5	2.5	100.0	
EX-	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	4	
T	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
C	0.0	0.0	2.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
R	0.0	0.0	25.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
FO-	9	0	2	0	0	0	40	1	0	0	3	0	8	2	0	65	
T	0.9	0.0	0.2	0.0	0.0	0.0	3.9	0.1	0.0	0.0	0.3	0.0	0.8	0.2	0.0	6.4	
C	3.3	0.0	4.4	0.0	0.0	0.0	7.8	25.0	0.0	0.0	7.5	0.0	12.3	7.4	0.0	6.4	
R	13.8	0.0	3.1	0.0	0.0	0.0	61.5	1.5	0.0	0.0	4.6	0.0	12.3	3.1	0.0	100.0	
DE-	10	0	2	0	0	0	5	0	0	0	0	0	2	7	1	27	
T	1.0	0.0	0.2	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.1	2.7	
C	3.6	0.0	4.4	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	3.1	25.9	5.9	2.7	
R	37.0	0.0	7.4	0.0	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	7.4	25.9	3.7	100.0	
SC-	6	0	1	0	0	0	2	0	0	0	3	0	2	0	4	18	
T	0.6	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.4	1.8	
C	2.2	0.0	2.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	7.5	0.0	3.1	0.0	23.5	1.8	
R	33.3	0.0	5.6	0.0	0.0	0.0	11.1	0.0	0.0	0.0	16.7	0.0	11.1	0.0	22.2	100.0	
SUM	274	6	45	1	0	11	515	4	0	4	40	4	65	27	17	1013	
T	27.0	0.6	4.4	0.1	0.0	1.1	50.8	0.4	0.0	0.4	3.9	0.4	6.4	2.7	1.7	100.0	

TEACHER 03

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	84	0	14	1	0	2	21	1	0	1	0	6	6	20	1	157
T	9.0	0.0	1.5	0.1	0.0	0.2	2.3	0.1	0.0	0.1	0.0	0.6	0.6	2.1	0.1	16.8
C	53.5	0.0	18.9	33.3	0.0	22.2	4.8	5.6	0.0	7.7	0.0	24.0	6.7	31.7	3.8	16.8
R	53.5	0.0	8.9	0.6	0.0	1.3	13.4	0.6	0.0	0.6	0.0	3.8	3.8	12.7	0.6	100.0
NP-	3	4	0	0	0	0	6	0	0	0	0	0	0	0	0	13
T	0.3	0.4	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
C	1.9	30.8	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
R	23.1	30.8	0.0	0.0	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
CO-	9	2	18	0	0	1	31	0	0	1	1	1	3	2	5	74
T	1.0	0.2	1.9	0.0	0.0	0.1	3.3	0.0	0.0	0.1	0.1	0.1	0.3	0.2	0.5	7.9
C	5.7	15.4	24.3	0.0	0.0	11.1	7.1	0.0	0.0	7.7	16.7	4.0	3.3	3.2	19.2	7.9
R	12.2	2.7	24.3	0.0	0.0	1.4	41.9	0.0	0.0	1.4	1.4	1.4	4.1	2.7	6.8	100.0
LI-	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	3
T	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
C	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
R	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.3
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	5	0	0	0	0	1	2	0	0	0	0	0	0	1	0	9
T	0.5	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.0
C	3.2	0.0	0.0	0.0	0.0	11.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.0
R	55.6	0.0	0.0	0.0	0.0	11.1	22.2	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	100.0
PR-	25	6	27	2	0	1	294	7	0	7	3	6	39	10	8	435
T	2.7	0.6	2.9	0.2	0.0	0.1	31.5	0.8	0.0	0.8	0.3	0.6	4.2	1.1	0.9	46.6
C	15.9	46.2	36.5	66.7	0.0	11.1	67.4	38.9	0.0	53.8	50.0	24.0	43.3	15.9	30.8	46.6
R	5.7	1.4	6.2	0.5	0.0	0.2	67.6	1.6	0.0	1.6	0.7	1.4	9.0	2.3	1.8	100.0
CP-	0	0	0	0	0	1	7	0	0	0	0	3	5	2	0	18
T	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0	0.0	0.0	0.0	0.3	0.5	0.2	0.0	1.9
C	0.0	0.0	0.0	0.0	0.0	11.1	1.6	0.0	0.0	0.0	0.0	12.0	5.6	3.2	0.0	1.9
R	0.0	0.0	0.0	0.0	0.0	5.6	38.9	0.0	0.0	0.0	0.0	16.7	27.8	11.1	0.0	100.0

TEACHER 03 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	1	0	1	0	0	0	6	1	0	2	0	0	1	1	0	13
T	0.1	0.0	0.1	0.0	0.0	0.0	0.6	0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.0	1.4
C	0.6	0.0	1.4	0.0	0.0	0.0	1.4	5.6	0.0	15.4	0.0	0.0	1.1	1.6	0.0	1.4
R	7.7	0.0	7.7	0.0	0.0	0.0	46.2	7.7	0.0	15.4	0.0	0.0	7.7	7.7	0.0	100.0
RB-	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	6
T	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.6
C	1.3	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.6
R	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	100.0
EX-	3	0	3	0	0	0	5	1	0	0	0	8	4	1	0	25
T	0.3	0.0	0.3	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.9	0.4	0.1	0.0	2.7
C	1.9	0.0	4.1	0.0	0.0	0.0	1.1	5.6	0.0	0.0	0.0	32.0	4.4	1.6	0.0	2.7
R	12.0	0.0	12.0	0.0	0.0	0.0	20.0	4.0	0.0	0.0	0.0	32.0	16.0	4.0	0.0	100.0
FO-	7	0	2	0	0	1	39	5	0	1	0	0	27	8	0	90
T	0.8	0.0	0.2	0.0	0.0	0.1	4.2	0.5	0.0	0.1	0.0	0.0	2.9	0.9	0.0	9.6
C	4.5	0.0	2.7	0.0	0.0	11.1	8.9	27.8	0.0	7.7	0.0	0.0	30.0	12.7	0.0	9.6
R	7.8	0.0	2.2	0.0	0.0	1.1	43.3	5.6	0.0	1.1	0.0	0.0	30.0	8.9	0.0	100.0
DE-	11	0	4	0	0	2	20	3	0	1	0	1	5	16	0	63
T	1.2	0.0	0.4	0.0	0.0	0.2	2.1	0.3	0.0	0.1	0.0	0.1	0.5	1.7	0.0	6.8
C	7.0	0.0	5.4	0.0	0.0	22.2	4.6	16.7	0.0	7.7	0.0	4.0	5.6	25.4	0.0	6.8
R	17.5	0.0	6.3	0.0	0.0	3.2	31.7	4.8	0.0	1.6	0.0	1.6	7.9	25.4	0.0	100.0
SC-	7	1	5	0	0	0	1	0	0	0	0	0	0	1	12	27
T	0.8	0.1	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	2.9
C	4.5	7.7	6.8	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.6	46.2	2.9
R	25.9	3.7	18.5	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	44.4	100.0
SUM	157	13	74	3	0	9	436	18	0	13	6	25	90	63	26	933
T	16.8	1.4	7.9	0.3	0.0	1.0	46.7	1.9	0.0	1.4	0.6	2.7	9.6	6.8	2.8	100.0

TEACHER 04

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	125	0	8	2	0	2	40	0	0	1	3	0	10	17	0	208
T	12.2	0.0	0.8	0.2	0.0	0.2	3.9	0.0	0.0	0.1	0.3	0.0	1.0	1.7	0.0	20.3
C	60.1	0.0	16.0	66.7	0.0	18.2	8.0	0.0	0.0	11.1	25.0	0.0	8.4	29.8	0.0	20.3
R	60.1	0.0	3.8	1.0	0.0	1.0	19.2	0.0	0.0	0.5	1.4	0.0	4.8	8.2	0.0	100.0
NP-	3	2	1	0	0	0	1	0	0	0	0	0	0	0	0	7
T	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
C	1.4	28.6	2.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
R	42.9	28.6	14.3	0.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
CO-	5	0	5	0	0	1	27	0	0	0	2	1	7	2	0	50
T	0.5	0.0	0.5	0.0	0.0	0.1	2.6	0.0	0.0	0.0	0.2	0.1	0.7	0.2	0.0	4.9
C	2.4	0.0	10.0	0.0	0.0	9.1	5.4	0.0	0.0	0.0	16.7	16.7	5.9	3.5	0.0	4.9
R	10.0	0.0	10.0	0.0	0.0	2.0	54.0	0.0	0.0	0.0	4.0	2.0	14.0	4.0	0.0	100.0
LI-	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
T	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
C	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
R	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	3	0	0	0	0	1	2	1	0	0	0	1	2	1	0	11
T	0.3	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.0	1.1
C	1.4	0.0	0.0	0.0	0.0	9.1	0.4	2.9	0.0	0.0	0.0	16.7	1.7	1.8	0.0	1.1
R	27.3	0.0	0.0	0.0	0.0	9.1	18.2	9.1	0.0	0.0	0.0	9.1	18.2	9.1	0.0	100.0
PR-	36	3	30	0	0	3	321	23	0	5	4	2	60	6	6	499
T	3.5	0.3	2.9	0.0	0.0	0.3	31.3	2.2	0.0	0.5	0.4	0.2	5.9	0.6	0.6	48.7
C	17.3	42.9	60.0	0.0	0.0	27.3	64.2	67.6	0.0	55.6	33.3	33.3	50.4	10.5	66.7	48.7
R	7.2	0.6	6.0	0.0	0.0	0.6	64.3	4.6	0.0	1.0	0.8	0.4	12.0	1.2	1.2	100.0
CP-	1	0	1	0	0	1	19	3	0	0	0	1	8	0	0	34
T	0.1	0.0	0.1	0.0	0.0	0.1	1.9	0.3	0.0	0.0	0.0	0.1	0.8	0.0	0.0	3.3
C	0.5	0.0	2.0	0.0	0.0	9.1	3.8	8.8	0.0	0.0	0.0	16.7	6.7	0.0	0.0	3.3
R	2.9	0.0	2.9	0.0	0.0	2.9	55.9	8.8	0.0	0.0	0.0	2.9	23.5	0.0	0.0	100.0

TEACHER 04 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RP-	1	0	0	0	0	0	5	0	0	0	1	0	1	1	0	9	
T	0.1	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.9	
C	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	8.3	0.0	0.8	1.8	0.0	0.9	
R	11.1	0.0	0.0	0.0	0.0	0.0	55.6	0.0	0.0	0.0	11.1	0.0	11.1	11.1	0.0	100.0	
RB-	5	1	0	0	0	0	3	0	0	0	0	0	2	1	0	12	
T	0.5	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	1.2	
C	2.4	14.3	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.7	1.8	0.0	1.2	
R	41.7	8.3	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	16.7	8.3	0.0	100.0	
EX-	1	0	0	0	0	0	2	1	0	0	0	0	1	1	0	6	
T	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.6	
C	0.5	0.0	0.0	0.0	0.0	0.0	0.4	2.9	0.0	0.0	0.0	0.0	0.8	1.8	0.0	0.6	
R	16.7	0.0	0.0	0.0	0.0	0.0	33.3	16.7	0.0	0.0	0.0	0.0	16.7	16.7	0.0	100.0	
FO-	11	1	1	1	0	1	66	6	0	1	1	0	20	10	0	119	
T	1.1	0.1	0.1	0.1	0.0	0.1	6.4	0.6	0.0	0.1	0.1	0.0	2.0	1.0	0.0	11.6	
C	5.3	14.3	2.0	33.3	0.0	9.1	13.2	17.6	0.0	11.1	8.3	0.0	16.8	17.5	0.0	11.6	
R	9.2	0.8	0.8	0.8	0.0	0.8	55.5	5.0	0.0	0.8	0.8	0.0	16.8	8.4	0.0	100.0	
DE-	13	0	4	0	0	2	9	0	0	1	1	1	8	18	0	57	
T	1.3	0.0	0.4	0.0	0.0	0.2	0.9	0.0	0.0	0.1	0.1	0.1	0.8	1.8	0.0	5.6	
C	6.3	0.0	8.0	0.0	0.0	18.2	1.8	0.0	0.0	11.1	8.3	16.7	6.7	31.6	0.0	5.6	
R	22.8	0.0	7.0	0.0	0.0	3.5	15.8	0.0	0.0	1.8	1.8	1.8	14.0	31.6	0.0	100.0	
SC-	4	0	0	0	0	0	2	0	0	1	0	0	0	0	3	10	
T	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	1.0	
C	1.9	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	11.1	0.0	0.0	0.0	0.0	33.3	1.0	
R	40.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	30.0	100.0	
SUM	208	7	50	3	0	11	500	34	0	9	12	6	119	57	9	1025	
T	20.3	0.7	4.9	0.3	0.0	1.1	48.8	3.3	0.0	0.9	1.2	0.6	11.6	5.6	0.9	100.0	

TEACHER 05

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	141	1	17	6	5	3	35	0	0	0	6	6	9	7	3	239
T	10.3	0.1	1.2	0.4	0.4	0.2	2.6	0.0	0.0	0.0	0.4	0.4	0.7	0.5	0.2	17.5
C	59.0	50.0	22.7	46.2	71.4	12.0	5.2	0.0	0.0	0.0	26.1	21.4	7.3	8.1	37.5	17.5
R	59.0	0.4	7.1	2.5	2.1	1.3	14.6	0.0	0.0	0.0	2.5	2.5	3.8	2.9	1.3	100.0
NP-	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
R	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
CO-	10	0	6	3	1	1	26	1	0	2	3	1	9	11	1	75
T	0.7	0.0	0.4	0.2	0.1	0.1	1.9	0.1	0.0	0.1	0.2	0.1	0.7	0.8	0.1	5.5
C	4.2	0.0	8.0	23.1	14.3	4.0	3.8	2.5	0.0	10.5	13.0	3.6	7.3	12.8	12.5	5.5
R	13.3	0.0	8.0	4.0	1.3	1.3	34.7	1.3	0.0	2.7	4.0	1.3	12.0	14.7	1.3	100.0
LI-	3	0	1	2	0	0	1	0	0	0	0	2	3	0	1	13
T	0.2	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	1.0
C	1.3	0.0	1.3	15.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	7.1	2.4	0.0	12.5	1.0
R	23.1	0.0	7.7	15.4	0.0	0.0	7.7	0.0	0.0	0.0	0.0	15.4	23.1	0.0	7.7	100.0
OP-	2	0	0	0	0	0	5	0	0	0	0	0	0	0	0	7
T	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
C	0.8	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
R	28.6	0.0	0.0	0.0	0.0	0.0	71.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
QU-	4	0	1	0	0	6	7	1	0	1	0	1	3	1	0	25
T	0.3	0.0	0.1	0.0	0.0	0.4	0.5	0.1	0.0	0.1	0.0	0.1	0.2	0.1	0.0	1.8
C	1.7	0.0	1.3	0.0	0.0	24.0	1.0	2.5	0.0	5.3	0.0	3.6	2.4	1.2	0.0	1.8
R	16.0	0.0	4.0	0.0	0.0	24.0	28.0	4.0	0.0	4.0	0.0	4.0	12.0	4.0	0.0	100.0
PR-	32	1	37	2	0	8	483	26	0	12	7	6	56	5	1	676
T	2.3	0.1	2.7	0.1	0.0	0.6	35.4	1.9	0.0	0.9	0.5	0.4	4.1	0.4	0.1	49.5
C	13.4	50.0	49.3	15.4	0.0	32.0	71.3	65.0	0.0	63.2	30.4	21.4	45.5	5.8	12.5	49.5
R	4.7	0.1	5.5	0.3	0.0	1.2	71.4	3.8	0.0	1.8	1.0	0.9	8.3	0.7	0.1	100.0
CP-	5	0	1	0	0	1	19	4	0	1	1	0	6	2	0	40
T	0.4	0.0	0.1	0.0	0.0	0.1	1.4	0.3	0.0	0.1	0.1	0.0	0.4	0.1	0.0	2.9
C	2.1	0.0	1.3	0.0	0.0	4.0	2.8	10.0	0.0	5.3	4.3	0.0	4.9	2.3	0.0	2.9
R	12.5	0.0	2.5	0.0	0.0	2.5	47.5	10.0	0.0	2.5	2.5	0.0	15.0	5.0	0.0	100.0

TEACHER 05 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	3	0	0	0	0	1	8	1	0	2	1	0	2	1	0	19	
T	0.2	0.0	0.0	0.0	0.0	0.1	0.6	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	1.4	
C	1.3	0.0	0.0	0.0	0.0	4.0	1.2	2.5	0.0	10.5	4.3	0.0	1.6	1.2	0.0	1.4	
R	15.8	0.0	0.0	0.0	0.0	5.3	42.1	5.3	0.0	10.5	5.3	0.0	10.5	5.3	0.0	100.0	
RB-	8	0	0	0	0	0	8	0	0	0	1	0	1	4	1	23	
T	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.1	1.7	
C	3.3	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.1	1.7	
R	34.8	0.0	0.0	0.0	0.0	0.0	34.8	0.0	0.0	0.0	4.3	0.0	0.8	4.7	12.5	1.7	
													4.3	17.4	4.3	100.0	
EX-	4	0	1	0	0	1	9	1	0	0	1	8	2	1	0	28	
T	0.3	0.0	0.1	0.0	0.0	0.1	0.7	0.1	0.0	0.0	0.1	0.6	0.1	0.1	0.0	2.1	
C	1.7	0.0	1.3	0.0	0.0	4.0	1.3	2.5	0.0	0.0	4.3	28.6	1.6	1.2	0.0	2.1	
R	14.3	0.0	3.6	0.0	0.0	3.6	32.1	3.6	0.0	0.0	3.6	28.6	7.1	3.6	0.0	100.0	
FO-	13	0	6	0	1	1	60	5	0	1	1	4	24	7	0	123	
T	1.0	0.0	0.4	0.0	0.1	0.1	4.4	0.4	0.0	0.1	0.1	0.3	1.8	0.5	0.0	9.0	
C	5.4	0.0	8.0	0.0	14.3	4.0	8.9	12.5	0.0	5.3	4.3	14.3	19.5	8.1	0.0	9.0	
R	10.6	0.0	4.9	0.0	0.8	0.8	48.8	4.1	0.0	0.8	0.8	3.3	19.5	5.7	0.0	100.0	
DE-	8	0	3	0	0	3	14	0	0	0	2	0	8	47	1	86	
T	0.6	0.0	0.2	0.0	0.0	0.2	1.0	0.0	0.0	0.0	0.1	0.0	0.6	3.4	0.1	6.3	
C	3.3	0.0	4.0	0.0	0.0	12.0	2.1	0.0	0.0	0.0	8.7	0.0	6.5	54.7	12.5	6.3	
R	9.3	0.0	3.5	0.0	0.0	3.5	16.3	0.0	0.0	0.0	2.3	0.0	9.3	54.7	1.2	100.0	
SC-	6	0	2	0	0	0	1	0	0	0	0	0	0	0	0	9	
T	0.4	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	
C	2.5	0.0	2.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	
R	66.7	0.0	22.2	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
SUM	239	2	75	13	7	25	677	40	0	19	23	28	123	86	8	1365	
T	17.5	0.1	5.5	1.0	0.5	1.8	49.6	2.9	0.0	1.4	1.7	2.1	9.0	6.3	0.6	100.0	

TEACHER 06

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	79	1	15	3	0	5	44	0	0	1	1	5	11	2	3	170
T	7.5	0.1	1.4	0.3	0.0	0.5	4.2	0.0	0.0	0.1	0.1	0.5	1.0	0.2	0.3	16.1
C	46.5	7.7	19.0	100.0	0.0	21.7	7.0	0.0	0.0	11.1	6.7	41.7	16.7	14.3	15.8	16.1
R	46.5	0.6	8.8	1.8	0.0	2.9	25.9	0.0	0.0	0.6	0.6	2.9	6.5	1.2	1.8	100.0
NP-	3	2	0	0	0	0	6	0	0	1	0	0	1	0	0	13
T	0.3	0.2	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	1.2
C	1.8	15.4	0.0	0.0	0.0	0.0	0.9	0.0	0.0	11.1	0.0	0.0	1.5	0.0	0.0	1.2
R	23.1	15.4	0.0	0.0	0.0	0.0	46.2	0.0	0.0	7.7	0.0	0.0	7.7	0.0	0.0	100.0
CO-	13	1	9	0	0	4	41	0	0	2	1	0	5	3	0	79
T	1.2	0.1	0.9	0.0	0.0	0.4	3.9	0.0	0.0	0.2	0.1	0.0	0.5	0.3	0.0	7.5
C	7.6	7.7	11.4	0.0	0.0	17.4	6.5	0.0	0.0	22.2	6.7	0.0	7.6	21.4	0.0	7.5
R	16.5	1.3	11.4	0.0	0.0	5.1	51.9	0.0	0.0	2.5	1.3	0.0	6.3	3.8	0.0	100.0
LI-	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3
T	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
C	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
R	33.3	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	14	1	2	0	0	0	3	0	0	0	0	0	3	0	0	23
T	1.3	0.1	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	2.2
C	8.2	7.7	2.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	2.2
R	60.9	4.3	8.7	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0	100.0
PR-	41	7	35	0	0	12	484	1	0	3	9	2	31	1	6	632
T	3.9	0.7	3.3	0.0	0.0	1.1	45.8	0.1	0.0	0.3	0.9	0.2	2.9	0.1	0.6	59.8
C	24.1	53.8	44.3	0.0	0.0	52.2	76.5	100.0	0.0	33.3	60.0	16.7	47.0	7.1	31.6	59.8
R	6.5	1.1	5.5	0.0	0.0	1.9	76.6	0.2	0.0	0.5	1.4	0.3	4.9	0.2	0.9	100.0
CP-	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
T	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
R	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

TEACHER 06 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	2	0	1	0	0	0	4	0	0	0	0	0	2	0	0	9
T	0.2	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.9
C	1.2	0.0	1.3	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.9
R	22.2	0.0	11.1	0.0	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	100.0
RB-	2	0	2	0	0	1	7	0	0	0	2	0	1	0	0	15
T	0.2	0.0	0.2	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	1.4
C	1.2	0.0	2.5	0.0	0.0	4.3	1.1	0.0	0.0	0.0	13.3	0.0	1.5	0.0	0.0	1.4
R	13.3	0.0	13.3	0.0	0.0	6.7	46.7	0.0	0.0	0.0	13.3	0.0	6.7	0.0	0.0	100.0
EX-	3	0	1	0	0	0	4	0	0	0	0	4	0	0	0	12
T	0.3	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.1
C	1.8	0.0	1.3	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	1.1
R	25.0	0.0	8.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	100.0
FD-	4	1	11	0	0	0	34	0	0	2	2	0	9	3	0	66
T	0.4	0.1	1.0	0.0	0.0	0.0	3.2	0.0	0.0	0.2	0.2	0.0	0.9	0.3	0.0	6.2
C	2.4	7.7	13.9	0.0	0.0	0.0	5.4	0.0	0.0	22.2	13.3	0.0	13.6	21.4	0.0	6.2
R	6.1	1.5	16.7	0.0	0.0	0.0	51.5	0.0	0.0	3.0	3.0	0.0	13.6	4.5	0.0	100.0
DE-	3	0	0	0	0	0	2	0	0	0	0	1	3	5	0	14
T	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.0	1.3
C	1.8	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	8.3	4.5	35.7	0.0	1.3
R	21.4	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	7.1	21.4	35.7	0.0	100.0
SC-	5	0	2	0	0	1	2	0	0	0	0	0	0	0	10	20
T	0.5	0.0	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.9
C	2.9	0.0	2.5	0.0	0.0	4.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.6	1.9
R	25.0	0.0	10.0	0.0	0.0	5.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	100.0
SUM	170	13	79	3	0	23	633	1	0	9	15	12	66	14	19	1057
T	16.1	1.2	7.5	0.3	0.0	2.2	59.9	0.1	0.0	0.9	1.4	1.1	6.2	1.3	1.8	100.0

TEACHER 07

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	241	3	12	0	0	7	33	3	0	2	7	0	4	22	5	339
T	23.5	0.3	1.2	0.0	0.0	0.7	3.2	0.3	0.0	0.2	0.7	0.0	0.4	2.1	0.5	33.0
C	71.1	13.0	18.2	0.0	0.0	36.8	9.4	11.5	0.0	50.0	20.6	0.0	4.3	45.8	22.7	33.0
R	71.1	0.9	3.5	0.0	0.0	2.1	9.7	0.9	0.0	0.6	2.1	0.0	1.2	6.5	1.5	100.0
NP-	2	11	0	0	0	0	8	0	0	0	1	0	0	1	0	23
T	0.2	1.1	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	2.2
C	0.6	47.8	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.9	0.0	0.0	2.1	0.0	2.2
R	8.7	47.8	0.0	0.0	0.0	0.0	34.8	0.0	0.0	0.0	4.3	0.0	0.0	4.3	0.0	100.0
CO-	10	0	23	0	0	2	26	0	0	0	3	0	1	1	0	66
T	1.0	0.0	2.2	0.0	0.0	0.2	2.5	0.0	0.0	0.0	0.3	0.0	0.1	0.1	0.0	6.4
C	2.9	0.0	34.8	0.0	0.0	10.5	7.4	0.0	0.0	0.0	8.8	0.0	1.1	2.1	0.0	6.4
R	15.2	0.0	34.8	0.0	0.0	3.0	39.4	0.0	0.0	0.0	4.5	0.0	1.5	1.5	0.0	100.0
LI-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	11	0	1	0	0	1	2	0	0	0	2	0	0	2	0	19
T	1.1	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	1.9
C	3.2	0.0	1.5	0.0	0.0	5.3	0.6	0.0	0.0	0.0	5.9	0.0	0.0	4.2	0.0	1.9
R	57.9	0.0	5.3	0.0	0.0	5.3	10.5	0.0	0.0	0.0	10.5	0.0	0.0	10.5	0.0	100.0
PR-	39	9	21	0	0	3	185	14	0	2	10	1	59	4	3	350
T	3.8	0.9	2.0	0.0	0.0	0.3	18.0	1.4	0.0	0.2	1.0	0.1	5.8	0.4	0.3	34.1
C	11.5	39.1	31.8	0.0	0.0	15.8	52.9	53.8	0.0	50.0	29.4	100.0	62.8	8.3	13.6	34.1
R	11.1	2.6	6.0	0.0	0.0	0.9	52.9	4.0	0.0	0.6	2.9	0.3	16.9	1.1	0.9	100.0
CP-	4	0	4	0	0	0	14	2	0	0	0	0	2	0	0	26
T	0.4	0.0	0.4	0.0	0.0	0.0	1.4	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	2.5
C	1.2	0.0	6.1	0.0	0.0	0.0	4.0	7.7	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.5
R	15.4	0.0	15.4	0.0	0.0	0.0	53.8	7.7	0.0	0.0	0.0	0.0	7.7	0.0	0.0	100.0

TEACHER 07 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	4
T	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.4
C	0.3	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	1.1	2.1	0.0	0.4
R	25.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	100.0
RB-	8	0	0	0	0	0	17	0	0	0	6	0	1	0	2	34
T	0.8	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.6	0.0	0.1	0.0	0.2	3.3
C	2.4	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	17.6	0.0	1.1	0.0	9.1	3.3
R	23.5	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	17.6	0.0	2.9	0.0	5.9	100.0
EX-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
C	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
R	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
FO-	4	0	2	0	0	1	49	6	0	0	1	0	24	7	0	94
T	0.4	0.0	0.2	0.0	0.0	0.1	4.8	0.6	0.0	0.0	0.1	0.0	2.3	0.7	0.0	9.2
C	1.2	0.0	3.0	0.0	0.0	5.3	14.0	23.1	0.0	0.0	2.9	0.0	25.5	14.6	0.0	9.2
R	4.3	0.0	2.1	0.0	0.0	1.1	52.1	6.4	0.0	0.0	1.1	0.0	25.5	7.4	0.0	100.0
DE-	15	0	0	0	0	5	14	0	0	0	2	0	2	10	0	48
T	1.5	0.0	0.0	0.0	0.0	0.5	1.4	0.0	0.0	0.0	0.2	0.0	0.2	1.0	0.0	4.7
C	4.4	0.0	0.0	0.0	0.0	26.3	4.0	0.0	0.0	0.0	5.9	0.0	2.1	20.8	0.0	4.7
R	31.3	0.0	0.0	0.0	0.0	10.4	29.2	0.0	0.0	0.0	4.2	0.0	4.2	20.8	0.0	100.0
SC-	4	0	3	0	0	0	1	0	0	0	2	0	0	0	12	22
T	0.4	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.2	2.1
C	1.2	0.0	4.5	0.0	0.0	0.0	0.3	0.0	0.0	0.0	5.9	0.0	0.0	0.0	54.5	2.1
R	18.2	0.0	13.6	0.0	0.0	0.0	4.5	0.0	0.0	0.0	9.1	0.0	0.0	0.0	54.5	100.0
SUM	339	23	66	0	0	19	350	26	0	4	34	1	94	48	22	1026
T	33.0	2.2	6.4	0.0	0.0	1.9	34.1	2.5	0.0	0.4	3.3	0.1	9.2	4.7	2.1	100.0

TEACHER 08

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	226	0	16	1	0	3	26	0	0	1	5	4	4	14	0	300
T	17.5	0.0	1.2	0.1	0.0	0.2	2.0	0.0	0.0	0.1	0.4	0.3	0.3	1.1	0.0	23.2
C	75.3	0.0	23.2	33.3	0.0	27.3	4.5	0.0	0.0	4.5	25.0	17.4	1.7	50.0	0.0	23.2
R	75.3	0.0	5.3	0.3	0.0	1.0	8.7	0.0	0.0	0.3	1.7	1.3	1.3	4.7	0.0	100.0
NP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO-	8	0	23	0	0	0	30	0	0	1	2	0	5	0	0	69
T	0.6	0.0	1.8	0.0	0.0	0.0	2.3	0.0	0.0	0.1	0.2	0.0	0.4	0.0	0.0	5.3
C	2.7	0.0	33.3	0.0	0.0	0.0	5.2	0.0	0.0	4.5	10.0	0.0	2.1	0.0	0.0	5.3
R	11.6	0.0	33.3	0.0	0.0	0.0	43.5	0.0	0.0	1.4	2.9	0.0	7.2	0.0	0.0	100.0
LI-	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3
T	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2
C	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2
R	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	100.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	2	0	1	0	0	2	4	0	0	0	0	0	2	0	0	11
T	0.2	0.0	0.1	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.9
C	0.7	0.0	1.4	0.0	0.0	18.2	0.7	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.9
R	18.2	0.0	9.1	0.0	0.0	18.2	36.4	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	100.0
PR-	37	0	24	1	0	6	366	1	0	11	7	6	114	2	2	577
T	2.9	0.0	1.9	0.1	0.0	0.5	28.4	0.1	0.0	0.9	0.5	0.5	8.8	0.2	0.2	44.7
C	12.3	0.0	34.8	33.3	0.0	54.5	63.3	50.0	0.0	50.0	35.0	26.1	48.9	7.1	100.0	44.7
R	6.4	0.0	4.2	0.2	0.0	1.0	63.4	0.2	0.0	1.9	1.2	1.0	19.8	0.3	0.3	100.0
CP-	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2
C	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2
R	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	100.0

TEACHER 08 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	3	0	0	0	0	0	11	0	0	3	2	0	3	0	0	22
T	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.2	0.2	0.0	0.2	0.0	0.0	1.7
C	1.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	13.6	10.0	0.0	1.3	0.0	0.0	1.7
R	13.6	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	13.6	9.1	0.0	13.6	0.0	0.0	100.0
RB-	4	0	3	0	0	0	9	0	0	0	1	1	1	1	0	20
T	0.3	0.0	0.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	1.5
C	1.3	0.0	4.3	0.0	0.0	0.0	1.6	0.0	0.0	0.0	5.0	4.3	0.4	3.6	0.0	1.5
R	20.0	0.0	15.0	0.0	0.0	0.0	45.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	0.0	100.0
EX-	4	0	0	1	0	0	8	0	0	0	0	7	3	0	0	23
T	0.3	0.0	0.0	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.0	1.8
C	1.3	0.0	0.0	33.3	0.0	0.0	1.4	0.0	0.0	0.0	0.0	30.4	1.3	0.0	0.0	1.8
R	17.4	0.0	0.0	4.3	0.0	0.0	34.8	0.0	0.0	0.0	0.0	30.4	13.0	0.0	0.0	100.0
FO-	2	0	2	0	0	0	114	1	0	5	3	4	94	8	0	233
T	0.2	0.0	0.2	0.0	0.0	0.0	8.8	0.1	0.0	0.4	0.2	0.3	7.3	0.6	0.0	18.0
C	0.7	0.0	2.9	0.0	0.0	0.0	19.7	50.0	0.0	22.7	15.0	17.4	40.3	28.6	0.0	18.0
R	0.9	0.0	0.9	0.0	0.0	0.0	48.9	0.4	0.0	2.1	1.3	1.7	40.3	3.4	0.0	100.0
DE-	11	0	0	0	0	0	7	0	0	1	0	1	5	3	0	28
T	0.9	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.1	0.4	0.2	0.0	2.2
C	3.7	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	4.5	0.0	4.3	2.1	10.7	0.0	2.2
R	39.3	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	3.6	0.0	3.6	17.9	10.7	0.0	100.0
SC-	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
T	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
C	0.7	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
R	66.7	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
SUM	300	0	69	3	0	11	578	2	0	22	20	23	233	28	2	1291
T	23.2	0.0	5.3	0.2	0.0	0.9	44.8	0.2	0.0	1.7	1.5	1.8	18.0	2.2	0.2	100.0

TEACHER 09

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	116	0	10	2	1	6	8	0	0	0	2	1	1	21	0	168
T	17.7	0.0	1.5	0.3	0.2	0.9	1.2	0.0	0.0	0.0	0.3	0.2	0.2	3.2	0.0	25.6
C	69.0	0.0	23.3	100.0	100.0	66.7	2.6	0.0	0.0	0.0	50.0	50.0	1.9	33.3	0.0	25.6
R	69.0	0.0	6.0	1.2	0.6	3.6	4.8	0.0	0.0	0.0	1.2	0.6	0.6	12.5	0.0	100.0
NP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO-	4	0	9	0	0	0	24	0	0	2	0	0	2	2	0	43
T	0.6	0.0	1.4	0.0	0.0	0.0	3.7	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	6.6
C	2.4	0.0	20.9	0.0	0.0	0.0	7.9	0.0	0.0	50.0	0.0	0.0	3.8	3.2	0.0	6.6
R	9.3	0.0	20.9	0.0	0.0	0.0	55.8	0.0	0.0	4.7	0.0	0.0	4.7	4.7	0.0	100.0
LI-	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
T	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
C	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
R	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
OP-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
T	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
C	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
R	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
QU-	3	0	1	0	0	0	2	0	0	0	0	0	1	2	0	9
T	0.5	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	1.4
C	1.8	0.0	2.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.9	3.2	0.0	1.4
R	33.3	0.0	11.1	0.0	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	11.1	22.2	0.0	100.0
PR-	16	0	19	0	0	2	228	2	0	0	1	1	29	6	0	304
T	2.4	0.0	2.9	0.0	0.0	0.3	34.8	0.3	0.0	0.0	0.2	0.2	4.4	0.9	0.0	46.3
C	9.5	0.0	44.2	0.0	0.0	22.2	74.8	66.7	0.0	0.0	25.0	50.0	55.8	9.5	0.0	46.3
R	5.3	0.0	6.3	0.0	0.0	0.7	75.0	0.7	0.0	0.0	0.3	0.3	9.5	2.0	0.0	100.0
CP-	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3
T	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5
C	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.5
R	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	100.0

TEACHER 09 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	4	
T	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.6	
C	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	50.0	0.0	0.0	1.9	0.0	0.0	0.6	
R	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	50.0	0.0	0.0	25.0	0.0	0.0	100.0	
RB-	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	4	
T	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.6	
C	1.2	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.6	
R	50.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	100.0	
EX-	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
T	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
C	0.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
R	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
FO-	2	0	3	0	0	1	28	1	0	0	0	0	12	5	0	52	
T	0.3	0.0	0.5	0.0	0.0	0.2	4.3	0.2	0.0	0.0	0.0	0.0	1.8	0.8	0.0	7.9	
C	1.2	0.0	7.0	0.0	0.0	11.1	9.2	33.3	0.0	0.0	0.0	0.0	23.1	7.9	0.0	7.9	
R	3.8	0.0	5.8	0.0	0.0	1.9	53.8	1.9	0.0	0.0	0.0	0.0	23.1	9.6	0.0	100.0	
DE-	21	0	1	0	0	0	9	0	0	0	0	0	5	27	0	63	
T	3.2	0.0	0.2	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.8	4.1	0.0	9.6	
C	12.5	0.0	2.3	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	9.6	42.9	0.0	9.6	
R	33.3	0.0	1.6	0.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	7.9	42.9	0.0	100.0	
SC-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
T	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
C	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
R	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
SUM	168	0	43	2	1	9	305	3	0	4	4	2	52	63	0	656	
T	25.6	0.0	6.6	0.3	0.2	1.4	46.5	0.5	0.0	0.6	0.6	0.3	7.9	9.6	0.0	100.0	

TEACHER 10

	PE	NP	CO	LI	OP	QU	PR	CP	CB	RP	RB	EX	FO	DE	SC	SUM
PE-	112	0	10	0	0	1	20	0	0	0	4	0	1	0	3	151
T	14.2	0.0	1.3	0.0	0.0	0.1	2.5	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.4	19.1
C	74.2	0.0	13.2	0.0	0.0	16.7	4.4	0.0	0.0	0.0	11.8	0.0	2.9	0.0	23.1	19.1
R	74.2	0.0	6.6	0.0	0.0	0.7	13.2	0.0	0.0	0.0	2.6	0.0	0.7	0.0	2.0	100.0
NP-	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	5
T	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
C	1.3	20.0	1.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
R	40.0	20.0	20.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
CO-	9	0	24	0	0	0	34	1	0	0	7	0	0	0	1	76
T	1.1	0.0	3.0	0.0	0.0	0.0	4.3	0.1	0.0	0.0	0.9	0.0	0.0	0.0	0.1	9.6
C	6.0	0.0	31.6	0.0	0.0	0.0	7.5	25.0	0.0	0.0	20.6	0.0	0.0	0.0	7.7	9.6
R	11.8	0.0	31.6	0.0	0.0	0.0	44.7	1.3	0.0	0.0	9.2	0.0	0.0	0.0	1.3	100.0
LI-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OP-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QU-	0	0	1	0	0	0	3	0	0	0	1	0	1	0	0	6
T	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.8
C	0.0	0.0	1.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	2.9	0.0	2.9	0.0	0.0	0.8
R	0.0	0.0	16.7	0.0	0.0	0.0	50.0	0.0	0.0	0.0	16.7	0.0	16.7	0.0	0.0	100.0
PR-	16	3	31	0	0	4	345	2	0	5	15	2	26	2	2	453
T	2.0	0.4	3.9	0.0	0.0	0.5	43.7	0.3	0.0	0.6	1.9	0.3	3.3	0.3	0.3	57.4
C	10.6	60.0	40.8	0.0	0.0	66.7	76.0	50.0	0.0	83.3	44.1	100.0	74.3	66.7	15.4	57.4
R	3.5	0.7	6.8	0.0	0.0	0.9	76.2	0.4	0.0	1.1	3.3	0.4	5.7	0.4	0.4	100.0
CP-	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	4
T	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5
C	0.7	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.5
R	25.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	100.0

TEACHER 10 CONTINUED

CB-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RP-	1	0	1	0	0	0	4	0	0	0	0	0	0	0	0	6
T	0.1	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
C	0.7	0.0	1.3	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
R	16.7	0.0	16.7	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
RB-	6	1	4	0	0	0	15	0	0	1	4	0	1	0	2	34
T	0.8	0.1	0.5	0.0	0.0	0.0	1.9	0.0	0.0	0.1	0.5	0.0	0.1	0.0	0.3	4.3
C	4.0	20.0	5.3	0.0	0.0	0.0	3.3	0.0	0.0	16.7	11.8	0.0	2.9	0.0	15.4	4.3
R	17.6	2.9	11.8	0.0	0.0	0.0	44.1	0.0	0.0	2.9	11.8	0.0	2.9	0.0	5.9	100.0
EX-	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
T	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
C	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
R	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
FO-	0	0	2	0	0	1	25	1	0	0	2	0	4	0	0	35
T	0.0	0.0	0.3	0.0	0.0	0.1	3.2	0.1	0.0	0.0	0.3	0.0	0.5	0.0	0.0	4.4
C	0.0	0.0	2.6	0.0	0.0	16.7	5.5	25.0	0.0	0.0	5.9	0.0	11.4	0.0	0.0	4.4
R	0.0	0.0	5.7	0.0	0.0	2.9	71.4	2.9	0.0	0.0	5.7	0.0	11.4	0.0	0.0	100.0
DE-	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3
T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.4
C	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.9	33.3	0.0	0.4
R	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	33.3	33.3	0.0	100.0
SC-	4	0	2	0	0	0	2	0	0	0	1	0	0	0	5	14
T	0.5	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	1.8
C	2.6	0.0	2.6	0.0	0.0	0.0	0.4	0.0	0.0	0.0	2.9	0.0	0.0	0.0	38.5	1.8
R	28.6	0.0	14.3	0.0	0.0	0.0	14.3	0.0	0.0	0.0	7.1	0.0	0.0	0.0	35.7	100.0
SUM	151	5	76	0	0	6	454	4	0	6	34	2	35	3	13	789
T	19.1	0.6	9.6	0.0	0.0	0.8	57.5	0.5	0.0	0.8	4.3	0.3	4.4	0.4	1.6	100.0